International Meetings and Journals Research Association

ISSN-p: 2790-0169 /-e: 2790-0177
Established: 2018

Science, Education and Innovations

in the Context of Modern Problems

Editor-in-Chief & Chair of the Editorial Board -
Dr. Rahil Najafov

Monthly | Regular | Open Access

October, 2025-Issue 11, Vol. 8

imcra-az.org

SEI JOURNAL
SCIENCE, EDUCATION AND INNOVATIONS IN THE CONTEXT OF MODERN PROBLEMS

IMCRA
International Meetings and Conferences Research Association

Science, Education and Innovations in the Context of Modern Problems

Volume 8, Issue 11 | 2025

Editor-in-Chief & Chair of the Editorial Board
Dr. **Rahil Najafov** (Azerbaijan)

International Multidisciplinary Collaboration and Research Association (IMCRA) | Regular Issue
Baku, Azerbaijan
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems (SEI)
Sci. Educ. Innov. Context Mod. Probl.

Science, Education and Innovations in the Context of Modern Problems (SEI) is an international, peer-reviewed, open-access academic journal that publishes cutting-edge research in the fields of science, education, technology, innovation, and interdisciplinary studies. Established in 2018, the journal operates under the umbrella of IMCRA, demonstrating a strong commitment to academic excellence, rigorous research ethics, and global accessibility. SEI fosters interdisciplinary dialogue and emphasizes the dynamic interplay between science, educational development, and technological innovation. The journal prioritizes research that addresses contemporary global and regional challenges, promoting evidence-based solutions to advance knowledge and societal progress.

Science, Education and Innovations in the Context of Modern Problems is an international, peer-reviewed academic journal that publishes original research at the intersection of science, education, and innovation. The journal promotes the practical application of scientific and technological advancements—particularly within educational systems—and welcomes interdisciplinary studies that are original, relevant, and impactful. In addition to education-focused research, the journal provides a platform for scholarly work in the **social sciences**, **pedagogical sciences**, and **technical disciplines**, with a special emphasis on **energy**, **robotics**, and other fields driving innovation. The journal is published entirely in English, with select articles also available in French to engage a broader international readership.

Focus

The primary aim of *Science, Education and Innovations in the Context of Modern Problems* is to foster the integration of science, technology, and education—particularly by promoting the application of cutting-edge scientific and technological innovations in educational and societal contexts.

Archaeology
Artificial Intelligence
Banking and Finance
Built Environment and Design
Business and Management
Business Systems in Context
Condensed Matter Physics
Creative and Professional Writing
Cybersecurity and Privacy
Commercial Law
Curriculum and Pedagogy
Demography
Econometrics
Economics (General, Theory, and of Education)
Educational Sciences
Environmental Studies and Sustainability
Environmental and Resource Law
Food Sciences
Geography and Regional Planning
Heritage, History, and Anthropology
History of Science
Human-Centered Computing
Human Society and Social Change
Interdisciplinary Social Science Research
International and Comparative Law
Languages and Literature
Law, Media, and Communication Studies
Library and Information Science
Linguistics
Marketing and Consumer Behavior
Metallurgy and Material Sciences
Pedagogical and Educational Research
Psychology and Cognitive Science
Robotics and Intelligent Systems
Science and Technological Innovation
Social and Economic Geography
Social Statistics and Informatics
Sociology and Social Work
Software Engineering and Information Systems
Strategy, Management, and Organizational Behavior
Urban and Regional Planning
Veterinary and Life Sciences

The SEI Journal particularly values interdisciplinary research that bridges gaps between scientific discovery, technological development, and educational practice. We are committed to fostering scholarly dialogue that supports global academic progress and practical innovation.

ISSN (Print): 2790-0169
ISSN (Online): 2790-0177
DOI Prefix: 10.56334/sei
Established: 2018

Publishing Country: Azerbaijan
Publisher: *IMCRA – International Meetings and Journals Research Association*
Editor-in-Chief: Dr. Rahil Najafov (Azerbaijan) | ORCID: 0000-0003-2460-6333
Email for Submission & Contact: **editor@imcra-az.org**, **contact@imcra-az.org**
Language: English (partly French)
Publication Frequency: Monthly (12 times)
Peer Review Type: Double-blind peer review
Access Model: Open Access

Abstracting and Indexing

Google Scholar *(H Index- 9)*
EBSCO
EBSCO- *Host*
EBSCO - SOCINDEX
Electronic Journals Library Universitätsbibliothek Duisburg-Essen
BASE Bielefeld Academic Search Engine
Zenodo
Dimensions Database
Scilit Database (MDPI)
PUBLONS - WoS
ECONBIZ - Find Economic Literature
SciUp Scientific Journals
Türk Eğitim İndeksi
PhilArchive (Digital Philosophy)
WorldCat
Gousher Colledge Library
Denmark Technical University
OpenAlex
ZDB Catalogue (ZDB NUmber 3120374)
MIAR
FH Aahchen University of applied Sciences
Research 4 Life - *Hinari*
MegaPaper
ИСТИНА
ISSN - ROAD
e-Library.ru
Livivo
IdealOnline
Swisscovery
Crossref
Mendeley - Elsevier
SCite_
Semantic Scholar
Asian Science Citation Index
Lens.org
MPRA
ELSEVIER SSRN
R Discovery
ACCESS ON

EDITORIAL TEAM

Editor-in-Chief

RAHIL NAJAFOV
Academic Rank: Dr.
Country: Azerbaijan
Institute: (1) International Meetings and Conferences Research Association (IMCRA), Baku;
Email: editor@imcra-az.org | rnacafov@gmail.com
ORCID: 0000-0003-2460-6333

Co-Editor-in-Chief

BEKBAEV RAUF
Academic Rank: Assoc. Prof. Dr.
Country: Uzbekistan
Institute: Head, Department of Education Management and Pedagogy, Tashkent International University of Education
ORCID: 0000-0001-5072-3379 | Scopus ID: —57226085329

Co-Editor-in-Chief

DEVASIS PRADHAN
Academic Rank: Dr.
Country: India
Institute: Acharya Institute of Technology, Bangalore
ORCID: 0000-0002-8201-2210| Scopus ID: 57220891293

Co-Editor-in-Chief

BEATRIZ SOTO ARANDA
Academic Rank: Prof. Dr.
Country: Spain
Institute: Universidad Rey Juan Carlos, Madrid
ORCID: 0000-0002-7389-0388| Scopus ID: 55560636800

Co-Editor-in-Chief

SYED SAQLAIN UL HASSAN
Academic Rank: Dr.
Country: Pakistan
Institute: University of Sialkot
Scopus ID: 57223851992 | ORCID: 0000-0002-8914-8081

INTERNATIONAL ADVISORY BOARD

ALI S. AL MUSAWI
Academic Rank: Prof. Dr.
Country: Oman
Institute: Sultan Qaboos University, Seeb
ORCID: 0000-0002-6893-3216 | Scopus ID: 6507895677

ALEXANDER CHUMAKOV
Academic Rank: Prof. Dr.
Country: Russia
Institute: Department of Philosophy, Financial University under the Government of the Russian Federation; Russian Philosophical Society
ORCID: 0000-0002-6513-5585 | Scopus ID: 57190586066

ANTONELLA NUZZACI
Academic Rank: Prof. Dr.
Country: Italy
Institute: University of Messina
ORCID: 0000-0003-4182-5845 | Scopus ID: 56245049500

ALIYEV SHAFA
Academic Rank: Prof. Dr.
Country: Azerbaijan
Institute: Research & Innovation Center, Western Caspian University, Humanities and Social Sciences
ORCID: 0000-0002-4997-7563 | Scopus ID: 56127676300

ECKART OTTO
Academic Rank: Prof. Dr.
Country: Germany
Institute: Ludwig Maximilian University of Munich
ORCID: 0000-0001-9066-705X | Scopus ID: 35756294200

SOM PAL BALIYAN
Academic Rank: Prof.
Country: South Africa
Institute: University of South Africa, Pretoria
ORCID: 0000-0003-0789-883X | Scopus ID: 35782903100

ÖZDEMİR CİHAN
Academic Rank: Professor
Country: Türkiye
Institute: Bilecik Şeyh Edebali University, Faculty of Humanities and Social Sciences, Turkish Language and Literature, Modern Turkish Literature
ORCID: 0000-0002-7186-3300 | Scopus ID: 55648175900

ELCHIN SULEYMANOV
Academic Rank: Assoc. Prof. Dr.
Country: Azerbaijan
Institute: Baku Engineering University
ORCID: 0000-0002-6075-2744 | Scopus ID: 57170575000

FETHI AHMET POLAT
Academic Rank: Prof. Dr.
Country: Türkiye
Institute: Istanbul University
ORCID: 0000-0001-7086-0477

HAMZA ANDALOUSSI
Academic Rank: Prof. Dr.
Country: Morocco
Institute: Arabic Journal for Translation Studies, Editor
ORCID: 0000-0002-3169-5373

HASAN AYDIN
Academic Rank: Prof. Dr.
Country: Türkiye
Institute: Ondokuz Mayıs University
ORCID: 0000-0002-0692-3725

HIJAZ AHMAD
Academic Rank: Prof. Dr.
Country: Türkiye
Institute: Near East University
ORCID: 0000-0002-5438-5407 | Scopus ID: 57220768187

MADONA KEBADZE
Academic Rank: Assoc. Prof. Dr. (Doctor of History)
Country: Georgia
Institute: Iakob Gogebashvili Telavi State University
ORCID: 0009-0002-5223-8259

ILHAM BASHIR OGLU AHMADOV
Academic Rank: Prof. Dr.
Country: Azerbaijan
Institute: Azerbaijan State Pedagogical University
ORCID: 0009-0009-5635-8945

KASHCHEEV SERGEY IVANOVIC
Academic Rank: Assoc. Prof.
Country: Russian Federation
Institute: Saratov State Law Academy
ORCID: 0009-0007-6958-1885 | Web of Science Researcher ID: MIT-7151-2025

NINO PRUIDZE
Academic Rank: Prof. Dr.
Country: Georgia
Institute: Tbilisi State Medical University
ORCID: 0009-0006-5522-0256

LUCAS PALACIOS LIBERATO
Academic Rank: Prof. Dr.
Country: Peru
Institute: Universidad Peruana Cayetano Heredia
Scopus IDs: 57212217140 / 57221426544

LUTHFATUL QIBTIYAH
Academic Rank: Dr.
Country: Indonesia
Institute: Universitas Al-Amien Prenduan
ORCID: 0000-0003-4617-3110

MAAZIZ ABDELKADER
Academic Rank: Prof. Dr.
Country: Algeria
Institute: Nour Al-Bashir Al-Beidh University
ORCID: 0009-0006-3436-1607

NADIA SMAIHI
Academic Rank: Prof. Dr.
Country: Algeria
Institute: University of Continuing Education
ORCID: 0000-0002-0594-6263

NEDA MOHAJEL
Academic Rank: Prof. Dr.
Country: Iran
Institute: Department of Educational Sciences, Farhangian University, Tabriz
ORCID: 0000-0003-0709-9253

ZINAIDA SHCHERBININA
Academic Rank: Dr.
Country: Russia
Institute: Academy of Labour and Social Relations, Moscow
ORCID: 0009-0000-7696-746X

GULNAR HAJIYEVA
Academic Rank: Dr.
Country: Azerbaijan
Institute: Baku State University
ORCID: 0000-0002-1061-1652 | Scopus ID: 57462693100

NURIL MUFIDAH
Academic Rank: Dr.
Country: Indonesia
Institute: Universitas Islam Negeri Maulana Malik Ibrahim Malang
Scopus ID: 57194035383

SAFRAOUI FATIMA
Academic Rank: Prof. Dr.
Country: Algeria
Institute: Faculty of Law and Political Science, University of Chlef
ORCID: 0009-0009-0562-7463

SATA NEDJIM
Academic Rank: Prof. Dr.
Country: Algeria
Institute: Mohamed Khider University of Biskra
ORCID: 0000-0003-0481-6851

TRAN MAI UOC
Academic Rank: Prof. Dr.
Country: Vietnam
Institute: Vietnam Banking University, Ho Chi Minh City
ORCID: 0000-0002-4659-7661

KHELKHAL MAROUA
Academic Rank: Prof. Dr.
Institute: University of Batna 1, Faculty of Islamic Sciences
Country: Algeria
ORCID: 0009-0008-6118-2203

FRANCIS OFORI
Academic Rank: Dr.
Country: Ghana
Institute: Offinso College of Education
ORCID: 0009-0001-7463-0254

SUBHAN TALIBLI
Academic Rank: Assoc. Prof. Dr.
Country: Azerbaijan
Institute: Institute of Oriental Studies, Azerbaijan National Academy of Sciences, Baku
ORCID: 0000-0002-6331-5865

EDITORIAL OFFICE & CONTACT INFORMATION

- Editor-in-Chief: Dr. Rahil Najafov (Azerbaijan) editor@imcra-az.org
- Language Editor: Praveen Kumar, Assistant Professor, Department of FMS, Marwadi University, India
- Assistant Editor-in-Chief: Dr. Iako Shiukashvili, Telavi Iakob Gogebashvili State University, Georgia
- Assistant Editor: Dr. Zinaida Shcherbinina (Russia)
- Journal Specialist & General Coordinator: Dr. M. Ganiyev deputyeditor@imcra-az.org
- Language Editor / Proofreader: A. Mustafazadah imcraaz@gmail.com
- Editorial Manager: J. Guliyev edit.manager@imcra-az.org
- Web Manager Assistant: A. Mikayilov forumofjournals@gmail.com
- Contact Manager: A. Najafova contact@imcra-az.org

International Diversity

Science, Education and Innovations in the Context of Modern Problems is firmly committed to internationalization and the promotion of inclusive scholarly communication. The journal's editorial and advisory boards are composed of distinguished academics and experts from a wide range of countries and institutions, including Azerbaijan, Türkiye, Russia, Georgia, Peru, Germany, India, Indonesia, Spain, South Africa, Algeria, Iran, Poland, Vietnam, and beyond.

This global representation underscores the journal's broad outreach, multidisciplinary orientation, and dedication to fostering academic dialogue across diverse cultural, geographical, and research traditions. By integrating perspectives from both developed and developing regions, the journal provides a credible platform for the exchange of knowledge, the advancement of innovation, and the strengthening of cross-cultural academic collaboration.

IMCRA - International Meetings and Journals Research Association

www.imcrapublishing.com | info@imcrapublishing.com

Science, Education and Innovations in the Context of Modern Problems

Editor-in-Chief & Chair of the Editorial Board
Dr. Rahil Najafov (Azerbaijan)

Print ISSN: 2790-0169
Online ISSN: 2790-0177
DOI Prefix: 10.56334/sei
OCLC Number: 1321947744
Established: 2018
Publisher Location: Baku, Azerbaijan
Frequency: Monthly | Regular | Open Access

Website: https://imcra-az.org
Contact / Submissions: editor@imcra-az.org

Table of Contents

Science, Education and Innovations in the Context of Modern Problems
Volume 8, Issue 11 (2025)

Corporate Governance in Algeria Between Concept and Reality
Rachid Chenini
DOI: https://doi.org/10.56334/sei/8.11.1| Pages: 5–15

Historical Perspectives on Education in Medieval Azerbaijan (10th–16th Centuries): Curriculum, Methodology, and Student Mobility
Akbar N. Najaf, Rahil Najafov
DOI: https://doi.org/10.56334/sei/8.11.2| Pages: 16–33

Behavioral Motives and Media Preferences of College Students: An Empirical Study on Social Media Hashtag Functionality
Shaohua Wei, Yu Zhang, Shan Chen
DOI: https://doi.org/10.56334/sei/8.11.3| Pages: 34–53

What Influences the Environmental Actions of College Students in Mainland China: Environmental Literacy as an Analytical Framework
Xuefeng Zhang, Weihua Lyu
DOI: https://doi.org/10.56334/sei/8.11.4| Pages: 54–69

Towards the Formation of a National Committee to Combat Racial and Regional Discrimination and Hate Speech
Khene Mohamed Ridha, Riadh Dench
DOI: https://doi.org/10.56334/sei/8.11.5| Pages: 70–76

Electronic Arbitration as a Mechanism for Resolving Disputes in International Trade Contracts
Okba Khadraoui, Louria Zouaoui
DOI: https://doi.org/10.56334/sei/8.11.6| Pages: 77–89

Administrative Oversight of Product Compliance as a Mechanism for Consumer Protection in Algerian Legislation
Karima Yahiaoui
DOI: https://doi.org/10.56334/sei/8.11.8| Pages: 90–107

The Efforts of Anatolian Scholars in Arabic Phonetics Through the Book *Juhd al-Muqil* by al-Mar'ashi
Younesse Zouaoui
DOI: https://doi.org/10.56334/sei/8.11.9 Pages: 108–119

The Impact of Social Media Use on Adolescent Upbringing – Facebook as a Model: A Field Study on a Sample of Students at Al-Shaheed Ben Awla Miloud El-Quettar High School
Ahmed Bekheira, Adelkadir Baghdad Bey
DOI: https://doi.org/10.56334/sei/8.11.10| Pages: 120–130

The Impact of Using Information Technology in Internal Auditing on the Quality of Financial Reports: A Field Study on a Sample of Economic Entities in Algeria
Akachat Hayet, Lakhal Fatima Zohra, Dafri Rima
DOI: https://doi.org/10.56334/sei/8.11.11| Pages: 131–156

Virtual Influencers as a New Format of Interactive Advertising
Eduard Matveevich Ivaykin, Vladimir Dmitrievich Sekerin
DOI: https://doi.org/10.56334/sei/8.11.12| Pages: 157–161

The Legal Framework of Public-Private Partnership Contracts: A Comparative Study
Khalid Bouzidi
DOI: https://doi.org/10.56334/sei/8.11.13| Pages: 162–181

Administrative Responsibility for Digital Technical Failures in the Era of Government Digitization: Challenges of Digital Governance and Accountability
Hanifi Hadda
DOI: https://doi.org/10.56334/sei/8.11.14| Pages: 182–209

Dynamique émotionnelle et mobilisation dans les techno-discours: Analyse multimodale et argumentée du cas de la disparition de Marwa (mai 2025)
Behout Asma, Ait Dahmane Karima
DOI: https://doi.org/10.56334/sei/8.11.15| Pages: 210–228

Reference and Ideology of the Image (A Study of Some Applied Model)
Maameri Faouaz
DOI: https://doi.org/10.56334/sei/8.11.7| Pages: 229–236

Artificial Intelligence and Legislative Quality: Enhancing Legal Drafting, Simplifying Legal Language, and Addressing Ethical and Accountability Challenges
Khaldi Omar
DOI: https://doi.org/10.56334/sei/8.11.16| Pages: 237–251

French Orientalism in Algeria Between Fairness and Unfairness
Abdelhak Boulakhras
DOI: https://doi.org/10.56334/sei/8.11.17| Pages: 252–260

The Impact of China's Industrial Structure Adjustment on Trade and Technological Cooperation Between China and the Eurasian Economic Union
Yuan Wang, Zhusheng Liu, Yuhu E
DOI: https://doi.org/10.56334/sei/8.11.18| Pages: 261–265

The Importance of Psychological Preparation for Athletes Participating in the Olympic Games and Its Contribution to Achieving Titles
Marouf Said, Zemam Abdelrahman, Derradji Abbes, Amina Djaafar
DOI: https://doi.org/10.56334/sei/8.11.19| Pages: 266–273

Urban Administrative Oversight and Property Rights: A Comparative Legal Analysis of Building Permits and Public Interest in Urban Planning
M'hamed Djebbar
DOI: https://doi.org/10.56334/sei/8.11.20| Pages: 274–282

Evolution of the American School of International Competitiveness of Nations
Valeriy Leonidovich Abramov
DOI: https://doi.org/10.56334/sei/8.11.21| Pages: 283–286

The Implications of South Sudan's Secession on Arab National Security – Egypt as a Model
Lounis Khobzaoui, Djelloul Laggoune
DOI: https://doi.org/10.56334/sei/8.11.22| Pages: 287–299

Career Plateau and Strategies to Confront It in the Work Environment – A Theoretical Analytical Reading
Moumen Nouara
DOI: https://doi.org/10.56334/sei/8.11.23| Pages: 300–311

Theoretical Approaches Explaining Stuttering
Ait Yahia Nadjia, Hacene Lamia
DOI: https://doi.org/10.56334/sei/8.11.24| Pages: 312–323

The Impact of Women's Employment on the Practice of Exclusive Breastfeeding (A Field Study at the Public Hospital Institution – Ksar Chellala, Tiaret Province)
Otmane Terchoun, Djaouida Amira
DOI: https://doi.org/10.56334/sei/8.11.25| Pages: 324–333

Psychological and Sociological Approaches on the Phenomenon of Bullying in Societies
Djeddou Abdelhafid
DOI: https://doi.org/10.56334/sei/8.11.26| Pages: 334–348

The Material Capabilities and Their Role in Building Trends Towards the Practice of Recreational Sports Physical Activity in the South of Algeria
Ben Saifia Lahcen, Ben Chaa Saad
DOI: https://doi.org/10.56334/sei/8.11.27| Pages: 349–358

The Erosion of the Family's Role and Its Repercussions for Youth Deviance: An Analytical Sociological Perspective
Hayet Senouci, Adel Belkacem
DOI: https://doi.org/10.56334/sei/8.11.28| Pages: 359–369

La digitalisation comme outil de dynamisation de la gouvernance d'entreprise: Étude de cas d'une PME Algérienne (CASA Médical)
Kendouli Narimane, Kandi Mohamed Amine
DOI: https://doi.org/10.56334/sei/8.11.29| Pages: 370–381

From Traditional Governance to Digital Governance: The Road to Sustainable Development – A Case Study of Condor Electronics in Algeria
Mabrouki Fateh, Youcefi Alaeddine, Ounnoughi Nabil, Ziouche Said
DOI: https://doi.org/10.56334/sei/8.11.30| Pages: 382–397

Moral Autonomy, Rational Faith, and Pedagogical Transformation: Reassessing Immanuel Kant's Philosophy of Religion and Education in the Enlightenment Context
Mouloud Akhdar
DOI: https://doi.org/10.56334/sei/8.11.31| Pages: 398–411

The Effect of the Six-Minute Method on Reducing Oral Reading Errors of Students with Reading Difficulties
Murat Başar, Abdurrahman Gürbüz
DOI: https://doi.org/10.56334/sei/8.11.32| Pages: 412–433

The Evolution of Logical Thought in Ancient Greece: From Pre-Socratic Foundations to Aristotle's Systematic Philosophy
Amina Larbi Daouadji
DOI: https://doi.org/10.56334/sei/8.11.33| Pages: 434–449

Universities and the Contemporary Educational Environment in Developed Countries: Comparative Analysis of Institutional Innovation, Entrepreneurial Functions, and International Research Collaboration in Germany, Poland, and the Czech Republic
Boyukagha Mikayilli
DOI: https://doi.org/10.56334/sei/8.11.34| Pages: 450–465

The Reality of the Quality of Pedagogical Practice in Algerian Universities and the Requirements for Its Improvement (A Field Study on a Sample of Faculty Members at Ahmed Draïa University – Adrar)
Aghiat Salima
DOI: https://doi.org/10.56334/sei/8.11.35| Pages: 466–479

The Role of Custody in Safeguarding Family Bonds in Moroccan Legislation
Benhachani Zouhir, Djerada Lakhdar
DOI: https://doi.org/10.56334/sei/8.11.36| Pages: 480–492

Robots Conversationnels et Acquisition du FLE: Vers une Interaction Homme-Machine Pédagogique
Boulahbal Karim, Harkou Lilia, Aifour Mohamed Chérif
DOI: https://doi.org/10.56334/sei/8.11.37| Pages: 493–500

Concept of Electronic Consumer Protection and Means of Safeguarding It Amid Artificial Intelligence Applications
Bouzaher Sonia
DOI: https://doi.org/10.56334/sei/8.11.38| Pages: 501–510

Primary School as Part of the Life Path of a Visually Impaired Child
Vera Remazhevskaya
DOI: https://doi.org/10.56334/sei/8.11.39| Pages: 511–519

The Role of Nanotechnology in Criminal Evidence: Practical Applications and Legal Challenges
Meliani Fayçal, Hakim Belil
DOI: https://doi.org/10.56334/sei/8.11.40| Pages: 520–528

The Legal Issues of Conventional Financial Derivatives and Their Alternatives According to the Standards of the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI): An Analytical Comparative Jurisprudential Study
Garoui Nora
DOI: https://doi.org/10.56334/sei/8.11.41| Pages: 529–542

Interactive Criticism of Digital Literature: A Taxonomic Approach to Interactive Texts
Berriche Hana Oum Elkeir
DOI: https://doi.org/10.56334/sei/8.11.42| Pages: 543–551

An Analysis of the Correlational Relationship Between Academic Achievement and Physical Ability Among Middle School Students
Boutaghane Mehdi, Ayadi Achouak
DOI: https://doi.org/10.56334/sei/8.11.43| Pages: 552–560

The Psychosocial Difficulties Associated with Adolescent Tattooing: An Exploration of the Complex Factors Influencing this Emerging Trend
Gahmous Mouna
DOI: https://doi.org/10.56334/sei/8.11.44| Pages: 561–572

Online Storytelling Before and After AI: Shifting Realities in Text, Image, Video, and Audience Experiences
Fawzi Cheriti, Dalila Mehiri, Aboubakr Saiti
DOI: https://doi.org/10.56334/sei/8.11.45| Pages: 573–586

The Philosophy of Revolution in Karl Marx: Historical Materialism, Class Struggle, and the Transformation from Capitalism to Socialism
Douza Mouna
DOI: https://doi.org/10.56334/sei/8.11.46| Pages: 587–591

Agile Management as an Effective Response to the Challenges of a Changing Business
Zouaoui Hamida
DOI: https://doi.org/10.56334/sei/8.11.47| Pages: 592–612

Liquidity Position of Selected Pharmaceutical Companies in India – A Case Study
Manish Seth, Rashmi Tiwari, Praveen Kumar
DOI: https://doi.org/10.56334/sei/8.11.48| Pages: 613–626

Archaeological Summer Schools as Pedagogical Platforms: Practical Integration of Field Research, Heritage Education, and Cultural Identity Formation in Contemporary Azerbaijan
Musa Mursaquliyev, Saadat Aliyeva, Shamil Najafov
DOI: https://doi.org/10.56334/sei/8.11.49| Pages: 627–635

Comparative Mechanisms for Assessing the Quality of Higher Education Institutions as a Tool for Enhancing Quality in Higher Education
Matanat Gurbanova
DOI: https://doi.org/10.56334/sei/8.11.50| Pages: 636–648

La communication étudiante en français sur Facebook: Entre brièveté, expressivité et créativité linguistique
Boulsane Réda, Saker Amina
DOI: https://doi.org/10.56334/sei/8.11.51| Pages: 649–660

The Commitment of the Intervenant to the Safety of the Consumer Against Biologically Treated Products
Naziha Boudjerada, Bouhouia Amel
DOI: https://doi.org/10.56334/sei/8.11.52| Pages: 661–673

Digitalization in Higher Education in Algeria: Trajectories and Outcomes
Ghania Bradai, Sakhria Saidi
DOI: https://doi.org/10.56334/sei/8.11.53| Pages: 674–682

Teaching Competencies of Vocational Training Instructors and Their Implementation from the Perspective of Trainees (A Field Study at the National Institute of Specialized Vocational Training in Management – Guelma)
Assia Amrane, Saliha Guidoum
DOI: https://doi.org/10.56334/sei/8.11.54| Pages: 683–699

Reforming Public Financial Management in Algeria: Navigating the Transition from Bureaucratic Rationality to New Public Management within the Framework of Organic Law 18-15
Akhal Mohammed
DOI: https://doi.org/10.56334/sei/8.11.55| Pages: 700–714

Safeguarding Marine Biodiversity Beyond National Jurisdiction: Legal and Institutional Mechanisms for Protecting the High Seas in the Context of Sustainable Development and Global Environmental Governance
Triki Cherifa
DOI: https://doi.org/10.56334/sei/8.11.56| Pages: 715–733

The Mutual Influence of Digital Media and Local Communities in the Age of Automation
Lotfi Ali Guechi
DOI: https://doi.org/10.56334/sei/8.11.57| Pages: 734–743

Exploring the Contribution of Small and Medium Enterprises to Non-Oil Exports in Algeria: A Regression Analysis Approach
Yasmina Kaci, Mohamed Boulesnam
DOI: https://doi.org/10.56334/sei/8.11.58| Pages: 744–757

Privacy and the Illusion of Cosmopolitan Culture in the Age of Digital Societies: Attempts to Critique Liquid Culture and Revitalize the Question of Infiltration
Hocine Messadi
DOI: https://doi.org/10.56334/sei/8.11.59| Pages: 758–770

The Reality of the Sino-Algerian Partnership Within the Framework of the Belt and Road Initiative: Gains and Challenges
Birem Fatima
DOI: https://doi.org/10.56334/sei/8.11.60| Pages: 771–784

Orientalism: Classification and Characteristics
Zoulikha Mansri
DOI: https://doi.org/10.56334/sei/8.11.61| Pages: 785–795

Educational Leadership Styles and Their Influence on the Psychological and Social Climate of the Classroom Group: Revisiting the Lippitt and White Experiment as a Foundational Model in Pedagogical Practice
Makhloufi Ali
DOI: https://doi.org/10.56334/sei/8.11.62| Pages: 796–808

Globalisation, Electronic Upbringing, and the Transformation of Family Socialization: Challenges, Risks, and Opportunities in the Age of Digital Connectivity
Abdelkader Chahed, Zoulikha Boumediene, Ahmed Hadjadj, Mohamed Kerroum
DOI: https://doi.org/10.56334/sei/8.11.63| Pages: 809–828

Algerian Legislation and the Self-Employed Entrepreneur: A Struggle Between Incentives and Challenges
Benziane Saada
DOI: https://doi.org/10.56334/sei/8.11.64| Pages: 829–839

Specialised Rehabilitation Centres and Their Role in the Reintegration of Juvenile Offenders: The Ain Laloui Centre – Bouira as a Case Study
Sellami Lakhder, Tarafi Sadek
DOI: https://doi.org/10.56334/sei/8.11.65| Pages: 840–847

The Use of 3D Animation in Education: Enhancing Visual Memory and Promoting Effective Learning in Azerbaijani Schools
Jafar Mansimi
DOI: https://doi.org/10.56334/sei/8.11.66| Pages: 848–858

E-Government as a Strategic Foundation for Building the Digital Economy: Analytical Perspectives on Infrastructure, Governance, and Policy Challenges
Maamar Hamdani
DOI: https://doi.org/10.56334/sei/8.11.67| Pages: 859–871

Pedagogical Strategies for Simplifying Arabic Grammar in al-Andalus: A Critical Analysis of al-Shaloubīn's Methodology in al-Tawṭi'a and Its Contribution to the Development of the Andalusian Grammatical Tradition
Ali Allouche
DOI: https://doi.org/10.56334/sei/8.11.68| Pages: 872–883

The Rhetorical Contributions of Mokhtar Nouiouat: Comparative Perspectives on Arabic Rhetoric in Light of Contemporary French and Arabic Traditions
Raki Larbi, Seghier Salem
DOI: https://doi.org/10.56334/sei/8.11.69| Pages: 884–899

Socio-Semiotic Approaches in Pedagogical Practice: Advancing Multiliteracy and Critical Thinking Through Multimodal Analysis and Visual Transcription in the Digital Age
Dutova Natalya Valerievna
DOI: https://doi.org/10.56334/sei/8.11.70| Pages: 900–906

Legal Consultation in the Era of Artificial Intelligence: Challenges of Civil Liability, Ethical Accountability, and the Redefinition of Professional Practice in the Digital Age
Larguet Samira
DOI: https://doi.org/10.56334/sei/8.11.71| Pages: 907–915

German Orientalism and the Foundations of Arabic Linguistic Studies: Franz Rosenthal as a Case Study and His Intellectual Influence on Noam Chomsky
Djilali Faci
DOI: https://doi.org/10.56334/sei/8.11.72| Pages: 916–924

Strengthening Faculty Performance Through Digital Pedagogical Training: A Comprehensive Case Study of the 2023 Cohort of Recruited University Professors in Algerian Higher Education
Blal Fatima Zahra, Ferroudji Nouh, Dey Sarra, Bouadma Aouda
DOI: https://doi.org/10.56334/sei/8.11.73| Pages: 925–934

Preparing University Teachers for English-Medium Instruction in Algeria: Institutional Challenges, Teacher Perceptions, and Prospects for Sustainable Implementation
Mezhoud Soraya, Haddad Amina
DOI: https://doi.org/10.56334/sei/8.11.74| Pages: 935–943

Integrating Energy-Based Approaches into Chemistry Teaching: An Experimental Study on Curriculum Effectiveness in Algerian Middle Education
Hafsa Gasmi
DOI: https://doi.org/10.56334/sei/8.11.75| Pages: 944–957

The Correctness of Arabic Linguistic Structures: Concepts, Foundations, and Analytical Approaches
Charef Tahar
DOI: https://doi.org/10.56334/sei/8.11.76| Pages: 958–963

Diagnostics of the Level of Formation of the Basics of Resource-Saving Culture in Older Preschool Children
Rublevskaya Elena, Davidyuk Maxim
DOI: https://doi.org/10.56334/sei/8.11.77| Pages: 964–973

An Econometric Analysis of the Dynamic Impact of Investment Expenditures on Economic Growth in Algeria: Evidence from the ARDL Approach (1992–2022)
Touba Dalila
DOI: https://doi.org/10.56334/sei/8.11.78| Pages: 974–983

Administrative Oversight as a Strategic Driver of Organizational Efficiency in Sports Institutions: Empirical Evidence from the Directorate of Youth and Sports of Biskra
Aoun Mohamed Imad Eddine, Khiri Djamel
DOI: https://doi.org/10.56334/sei/8.11.79| Pages: 984–995

Analytical Possibilities of Stakeholder Theory in Higher Education: Strategic Perspectives for Ensuring Quality of Educational Programs
Yevdokymova Natalia, Kotenok Daria
DOI: https://doi.org/10.56334/sei/8.11.80| Pages: 996–1001

The Role of Scientific Research in Developing the Management of Training Programs for Human Resources in the Municipality
Sebiane Mohammed
DOI: https://doi.org/10.56334/sei/8.11.81 | Pages: 1002–1012

The Influence of Cyberbullying on the Development of Self-Esteem Among University Students: A Field Study on a Sample from the Faculty of Social and Human Sciences at Abdelhamid Ibn Badis University, Mostaganem, During the Academic Year 2024/2025
Mezhoudi Khoula; Boukassara Hayat
DOI: https://doi.org/10.56334/sei/8.11.82| Pages: 1013–1030

Burnout among Employed Women: An Expanded Analytical Study on the Interplay of Family Obligations, Occupational Stressors, and Psychosocial Well-Being in Contemporary Work–Life Balance
Hadda Melili; Nour El Houda Merabet
DOI: https://doi.org/10.56334/sei/8.11.83| Pages: 1031–1041

Theory of Spiritual and Vital Integration in Social Interaction: A Comprehensive Framework for the VREBIS System
Delhoum Moufida
DOI: https://doi.org/10.56334/sei/8.11.84| Pages: 1042–1049

The Criminalization of Witchcraft and Sorcery under Algerian Law No. 24-06: A Legal and Socio-Cultural Analysis of Articles 303 bis 42 and 303 bis 43 of the Penal Code
Araba Manel
DOI: https://doi.org/10.56334/sei/8.11.85 | Pages: 1050–1061

Emir Abdelkader in Western European Historical Writings: Between Realism and Controversy — A Critical Reappraisal of Colonial and Post-Colonial Historiography
Fatima Chikh
DOI: https://doi.org/10.56334/sei/8.11.86 | Pages: 1062–1071

The Integration of Artificial Intelligence in Accounting and Its Implications for the Future of the Accounting Profession in Algeria: An Exploratory Study
Benlakhdar Aissa
DOI: https://doi.org/10.56334/sei/8.11.87 | Pages: 1072–1082

Cyberbullying and Life Satisfaction Among University Students
Zitouni Radjaa; Mellal Khadidja
DOI: https://doi.org/10.56334/sei/8.11.88 | Pages: 1083–1088

Mechanisms for Implementing Total Quality Management in Higher Education Institutions and Their Role in Local Community Development
Dhib Mohammed; Mehenna Nassira
DOI: https://doi.org/10.56334/sei/8.11.89 | Pages: 1089–1099

The Influence of the External Environment on the Development of Entrepreneurial Thinking: An Empirical Study in Algeria
Tabet Aoul Khadidja Imene
DOI: https://doi.org/10.56334/sei/8.11.90 | Pages: 1100–1107

Socioeconomic and Cultural Determinants of Female Students' Attitudes Toward Sports and Recreational Tourism: An Empirical Study in Secondary Schools of Laghouat, Algeria

Guignol Badreddine
DOI: https://doi.org/10.56334/sei/8.11.91 | Pages: 1108–1116

Subliminal Advertising: From Its Genesis to Contemporary Practice and Future Directions in Consumer Psychology and Marketing Communication
Vanshika Saran Sharma; Nilesh Gokhale
DOI: https://doi.org/10.56334/sei/8.11.92 | Pages: 1117–1128

Digital Enterprises in Algerian Legislation: Legal Framework, Evidentiary Challenges, and Prospects for Regulatory Modernization
Guezei Abdelali; Abdallah Bouguenna
DOI: https://doi.org/10.56334/sei/8.11.93 | Pages: 1129–1140

The Criminal Protection of Tourists in Algeria: Legal Frameworks, Security Strategies, and Institutional Mechanisms for Sustainable Tourism Development
Azzaz Mourad
DOI: https://doi.org/10.56334/sei/8.11.94 | Pages: 1141–1151

Teaching English in Algerian Middle Schools: Reconciling Teachers' Perceptions with the Realities of Practice under Contemporary Educational Policies
Abdelhadi Rachid
DOI: https://doi.org/10.56334/sei/8.11.95 | Pages: 1152–1165

The Dynamic Impact of Real Exchange Rate Movements on Domestic Savings in Algeria: An Econometric Investigation Using the ARDL Approach (1980–2023)
Menad Mhammed; Serdouk Bellahouel
DOI: https://doi.org/10.56334/sei/8.11.96 | Pages: 1166–1182

The Poetics of Narrative Configuration: Reconsidering Mahmoud Darwish's Mural as a Modern Aesthetic Dialogue between Life, Death, and Poetic Form
Samira Hafsi
DOI: https://doi.org/10.56334/sei/8.11.97 | Pages: 1183–1194

The Poetics of Whisper and Repetition: Phonetic Resonances and Emotional Architecture in Hanin Omar's Poetry
Abdelkarim Bensadek; Maamar Ben Ghouini
DOI: https://doi.org/10.56334/sei/8.11.98 | Pages: 1195–1205

The Aesthetics of Poetic–Scriptural Duality: Mechanisms and Dimensions in the Poetics of Ibn al-Muʿtazz
Hadjadj Abderrahman
DOI: https://doi.org/10.56334/sei/8.11.99 | Pages: 1206–1218

Article Licensing and Copyright Policy

All articles published in the *Science, Education and Innovations in the Context of Modern Problems (SEI)* journal are licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0). This license permits unrestricted use, distribution, reproduction, adaptation, and transmission of the work in any medium or format, provided that proper credit is given to the original author(s) and source.

The licensing information is clearly indicated on the abstract page of each article with the following statement:

Copyright and Licensing Agreement
Authors retain full ownership of their intellectual work and grant *SEI* the right of first publication under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0). This license allows the published content to be freely shared and reused, as long as appropriate attribution is provided and the work is originally published in this journal.

RESEARCH ARTICLE

Corporate governance in Algeria between concept and reality

Rachid Chenini
Doctor
Faculty of Economic, Business and Management Sciences, University of Ghardaia
Algeria
Email: chenini.rachid@univ-ghardaia.edu.dz
ORCID ID: 0000-0002-7620-8321

Doi Serial https://doi.org/10.56334/sei/8.11.1

Keywords Corporate Governance, Board of Directors, Transparency and Disclosure, Administrative and Financial Corruption.
JEL classifications: G3, K2, M1.

Abstract
This research aims to clarify the concept of corporate governance as a new mechanism that focuses on the necessity of following rational methods that work to protect the institution. It does so by striving to satisfy various stakeholders and reconciling their interests, ensuring transparency, accountability, and the protection of capital in companies and markets, as well as safeguarding the interests of stakeholders related to the institution. Most importantly, it aims to restore the trust of market participants, especially following collapses and failures that have occurred. We concluded that corporate governance is the way in which institutions are managed and monitored by all parties concerned with the institution. Algeria, like all countries, faces numerous economic, social, and political challenges, necessitating the prompt evaluation of its current situation and planning to keep pace with developments in alignment with its values, principles, and capabilities, in order to achieve efficient management of Algerian institutions, ultimately enhancing corporate performance.

Citation. Chenini R. (2025). Corporate governance in Algeria between concept and reality. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 5–15. https://doi.org/10.56352/sei/8.11.1
Issue: https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.04.2025 | Accepted: 21.07.2025 | Published: 01.09.2025 (available online)

1. Introduction:

Corporate Governance [CG] is a relevant issue in academic writing and finance and accounting fields due to the chain of financial scandals around the world. CG monitors the effectiveness of management and ensures legal compliance by preventing irregular and improper behaviour. In this sense, leading global institutions such as the Organization for Economic Cooperation and Development [OECD], the International Finance Corporation [IFC] and the World Bank, strongly emphasize the development of different regulations, guidelines and good governance codes around the world. OECD affirms that CG "has implications for company behaviour towards employees, shareholders, customers and banks". (Briano-Turrent & Rodríguez-Ariza, 2016, p. 63)

Corporate governance refers to a set of rules, systems, and procedures that regulate the relationships among key stakeholders, including corporate management, shareholders, and interest groups, as well as the control and disclosure systems that impact corporate performance. Its primary aim is to enhance quality and boost performance rates by establishing strategic plans and objectives for companies. It also involves setting appropriate incentives for management to achieve these objectives in a manner that serves both their own interests and those of the shareholders, while encouraging adherence to the principles of transparency and the prevention of conflicts of interest and materially or ethically unacceptable conduct. This is achieved within the framework of regulatory systems overseeing corporate management and board members, and by clearly defining the distribution of rights and responsibilities between the board of directors and shareholders. Governance procedures also outline the workflow within companies to ensure the achievement of governance objectives.

Given its importance, companies of various types, whether joint-stock companies or family-owned businesses, strive to implement governance practices in order to realize several key benefits, most notably: fostering a climate of confidence among investors and shareholders, maximizing corporate value, and strengthening competition in global financial markets. All these efforts aim to avoid the crises faced by several major international companies listed on prominent financial markets.

Based on the above, we can formulate the following main research question:

What is the concept and reality of corporate governance in Algeria?

Research Hypotheses:

- The concept of corporate governance is multifaceted and complex across different fields due to varying circumstances and environments surrounding it.

- Corporate governance constitutes the rules through which a company is directed and controlled, including mechanisms that organize the different relationships among the board of directors, executive managers, shareholders, and stakeholders.
- Corporate governance is achieved by adopting a policy of change and development of the mechanisms that govern it, along with undertaking fundamental reforms that ultimately lead to the realization of its objectives.
- Algerian economic enterprises are striving to implement the principles of the governance system despite the novelty of its practice.

This research aims to highlight the following points:

- To identify and enumerate the reasons behind the growing interest in the subject of governance in general, and corporate governance in particular;
- To gain comprehensive knowledge of the various global models of corporate governance;
- To emphasize that the application of modern management approaches and corporate governance mechanisms has become an imperative for Algerian economic enterprises in the context of global integration;
- To assess the reality of corporate governance in Algeria by diagnosing the state of its institutional framework and the mechanisms of its implementation.

1.3 Research Methodology:

In this study, we have adopted the descriptive-analytical method by describing the theoretical aspect of the subject under investigation and analyzing its related elements through the use of specific statistical tools such as tables, figures, and others, while also addressing the case of Algeria.

The Concept of Economic Institutions Governance:

Below, we will clarify the fundamental concepts related to the governance of economic institutions:

Historical Overview:

The term "governance" traces back to an ancient Greek word from the 13th century, *kuberman*, which referred to the ability and skill of a ship captain in steering through waves, storms, and tempests, embodying noble values, ethical conduct, and integrity in safeguarding the lives and possessions of passengers, caring for entrusted goods, and ensuring their safe delivery to rightful owners while defending them against pirates and other dangers encountered during navigation. When such a captain successfully completed his mission and returned safely to the departure port, he was referred to as a *good governor*.

The term "governance" (*gouvernance*) was first used in Old French during the 13th century as a synonym for "government" (*gouvernement*). Similarly, it was employed in Latin under the term *gubernare* at the beginning of the 14th century with the same meaning. In English, the term *governance* was introduced to denote the method or process of management or rule (Ghadban, 2013, p. 2).

In the modern era, the concept of corporate governance emerged in the 1930s in the United States, where debates arose concerning the relationships between managers and shareholders. Berle and Means pointed to the risks inherent in the separation of ownership and management within corporations. This highlighted the need to control or monitor managers and to protect the interests of minority shareholders.

The concept of corporate governance evolved further following the Treadway Commission Report of 1987, which aimed to address concerns regarding the functioning of corporate administrative bodies and their relationships with shareholders. These concerns were structured around three main axes: the credibility or legitimacy of authority within corporations, the transparency of decision-making processes, and the effectiveness of corporate monitoring mechanisms (Thierry et al., 2003, pp. 103–104).

Efforts continued across most countries to establish corporate governance principles and rules; however, Arab countries were relatively late in officially issuing such frameworks. The earliest instances of establishing corporate governance principles in Arab countries date back to 2004 in Oman and 2005 in Egypt (Ben Saha & Boukhari, 2013, p. 333).

In Algeria, the term "good governance" (*gouvernance raisonnée*) was adopted as a synonym for corporate governance. It refers to an administrative and voluntary process aimed at achieving transparency and rigor in the management, administration, and monitoring of corporations, with the goal of ensuring the sustainability and competitiveness of the institution through: "defining the rights and duties of the stakeholders within the corporation, and sharing the powers and responsibilities arising from the initial step" (Ghadban, 2013, p. 6).

Definition of Corporate Governance:

Some authors provide a broad definition of corporate governance. In this context, G. Charreaux defines it as encompassing all organizational mechanisms that influence the distribution of authority and impact managerial decision-making. In other words, governance dictates managerial behaviour and guides their discretion.

This definition allows for a better understanding of the underlying challenges of corporate governance by involving all the relationships that a corporation maintains with its various stakeholders: shareholders, bankers, employees, clients, public authorities, and all parties interested in the corporation's activities.

The issue, therefore, extends far beyond the traditional focus on the relationship between managers and shareholders; it broadens to include all stakeholders. Consequently, governance not only ensures the proper use of resources to create and preserve wealth, but also aims to promote the common good, grounded in ethical principles.

According to J.-C. Shaw, the objective behind this concept is that the behaviour of leaders should enable humanity to advance while simultaneously fostering the development of social justice in a well-protected environment. Thus, corporate governance aligns with the goals of sustainable development (Thierry et al., 2003, pp. 107–108).

Objectives and Core Principles of Corporate Governance:

The Principles of Corporate Governance were approved in 1999 by the Ministers of the Organisation for Economic Co-operation and Development (OECD). Since then, they have been regarded as an international reference.

Corporate governance, through regulating the relationship between stakeholders, aims to achieve three main objectives: (Ghadban, 2013, p. 5)

- A **narrow approach** focusing on the necessity for governance to work in the interest of shareholders by reducing the cost of capital.
- A **broader approach** emphasizing the need to improve corporate performance as the center of wealth creation.
- A **comprehensive approach** which adds further responsibilities to corporate governance, such as commitment to social responsibility, business ethics, and so on.

Corporate governance encompasses all organizational mechanisms within the economic and social system with the objective of ensuring the achievement of common goals: security, prosperity, cohesion, order, system sustainability, and sustainable development.

The key principles on which corporate governance is based include: (Bakkour, 2013, p. 9)

- **Shareholder Rights:** Safeguarding secure ownership of shares, disclosure of relevant information, the right to vote, and participation in major decisions regarding the sale or restructuring of corporate assets, including mergers and new share issuances.
- **Equitable Treatment of Shareholders:** Ensuring fair treatment of all shareholders, including minority and foreign shareholders, and guaranteeing that all shareholders can seek effective redress for violations of their rights.
- **Role of Stakeholders in Corporate Governance:** Recognizing the rights of stakeholders established by law or through mutual agreements and encouraging active cooperation and communication between corporations and stakeholders to create wealth, employment opportunities, and ensure corporate sustainability based on sound financial practices.
- **Transparency and Disclosure:** Ensuring the accurate and timely disclosure of all material matters regarding the corporation, including financial performance, ownership, and governance structures and policies.
- **Responsibilities of the Board of Directors:** Ensuring the strategic guidance of the company, effective monitoring of management by the board, and the board's accountability and loyalty to the company and its shareholders.

Stakeholders Involved in the Implementation of Corporate Governance and Its Models:

Below, we clarify the stakeholders involved in the implementation of corporate governance and its various models:

Stakeholders in the Implementation of Governance: Corporate governance, in terms of the stakeholders involved in its implementation, can be divided into four main parties. These parties are both influenced by and influential in the proper application of governance and contribute significantly to its success or failure. These parties are as follows: (DJOUADI & BENAMARA, 2018, p. 101)

Shareholders: They provide the company's capital by owning shares in exchange for investment returns.

Board of Directors: They represent the shareholders as well as other stakeholders. Through its members, the Board of Directors is responsible for appointing executive managers who are entrusted with the daily management of the company's operations, in addition to monitoring their performance.

Executive Management: This body is responsible for the actual administration of the company and for providing performance reports to the Board of Directors. It also bears the responsibility for transparent disclosure of information and for enhancing the company's value by maximizing profits.

Stakeholders: It is important to note that shareholders are not the only creditors of the company. Maximizing shareholder value alone is insufficient if not accompanied by meeting the needs of a broader range of stakeholders both within and outside the company, such as creditors, suppliers, and employees.

Moreover, these various stakeholders may sometimes have conflicting interests. For example, creditors are mainly concerned with the company's ability to repay its debts, while employees are more interested in the company's ability to ensure long-term sustainability (Faddaoui, 2014, p. 44).

Models of Corporate Governance:

The methods adopted by different institutions to obtain financing and ownership are considered among the most important determinants of corporate governance.

The models vary from one country to another due to differences in economic, legislative, political, and social conditions, as well as the nature of relationships among various stakeholders.

It should be noted that leading governance models around the world have been classified into market-oriented models, network-oriented models, and hybrid models that combine features of both previous types.

The following table presents the main corporate governance models in practice:

Table 1: Corporate Governance Models

Model	Anglo-Saxon Model	German Model	Japanese Model	Hybrid Model
Objective of the Corporation	Maximize profits and owners' wealth.	Achieve the interests of various stakeholders, such as employees, lenders, and shareholders.	The corporation is a community with multiple stakeholder groups, aiming also to fulfill shareholders' desires and maximize their wealth.	Combines consideration of shareholders' interests with the interests of other stakeholder groups.
Stakeholder Group Influencing Management	Shareholders.	Shareholders and stakeholders (e.g., employees, banks).	Shareholders and stakeholders (e.g., employees, major clients, and banks).	Shareholders; however, influence is not absolute and requires consensus of 50% of shareholders.
Board of Directors	Relies on a single Board of Directors to manage the corporation.	Relies on two boards: – Supervisory Board: composed of representatives of shareholders and employees. – Management Board: responsible for overseeing executive management.	Relies on a single Board of Directors.	French law permits either a single Board of Directors or two separate boards; however, typically a single board manages the corporation.
Existence of an Efficient Market for Corporate Control	Active mechanism: capital markets are efficient with laws facilitating market control.	Passive mechanism: many laws restrict corporate takeovers, though some authors noted recent developments allowing more takeovers.	Passive mechanism: intertwined relationships and cross-shareholding between corporations limit takeovers, though some shifts have been observed.	Passive mechanism: used infrequently.
Ownership Concentration	Ownership is dispersed; e.g., in the U.S., laws prevent individual investors from owning beyond a certain limit.	High ownership concentration: the top five shareholders, primarily banks and institutional investors, may control up to 80% of shares; sometimes an individual investor holds more than 50%.	Moderate ownership concentration, lower than in the German model.	Companies may be controlled by the government or families; ownership is concentrated but less so than in the German model.
Executive Compensation	Strongly tied to performance and	Not primarily linked to performance.	Not primarily linked to executive	Generally not linked to performance, except in

	success achieved.		performance.	France where some performance-based incentives exist.

Source: (Faddaoui, 2014, pp. 91-92)

Objectives and Importance of Corporate Governance:

Objectives of Corporate Governance:

The rules of governance aim to regulate and guide administrative, financial, and technical practices, and to ensure adherence to established controls and policies. They address the proper application of rules, aid in attracting investments, enhance competitiveness, combat corruption in all its forms, whether administrative, financial, or accounting, and support the stability of financial markets and the improvement of the economy, through the following means: (Zerzar, 2010, p. 4)

- Emphasizing compliance with the law and ensuring the review of financial performance, while establishing administrative structures that enable the accountability of management before shareholders, along with the formation of an audit committee composed of non-board members, entrusted with various tasks, powers, and competencies to achieve independent oversight;
- Strengthening the element of transparency in all company transactions, operations, accounting procedures, and financial auditing in a manner that limits administrative and financial corruption: (Khalil & Al-Ashmaoui, 2008, p. 35)
- Improving the efficiency of the company's resource utilization and maximizing its market value, thereby enhancing its ability to attract necessary local and global financing sources for expansion and growth, enabling the creation of new job opportunities while working to reinforce market stability, which ultimately leads to achieving efficiency and development;
- Ensuring fair treatment of stakeholders in the event of the company's insolvency;
- Increasing confidence in the national economy, deepening the role of the capital market, enhancing its ability to mobilize savings, raising investment rates, and supporting competitiveness;
- Overseeing the company's social responsibility through appropriate procedures linked to activities serving the environment and society;
- Curbing potential managerial misconduct and ensuring effective alignment between the interests of management and those of shareholders (Talib & Al-Mashhadani, 2011, p. 43);
- Achieving long-term competitiveness, thereby creating incentives for development, the adoption of modern technologies, and raising investor awareness so that the company can withstand intense competition.

The Importance of Corporate Governance:

The importance of governance in corporate management is increasing in order to establish trust in the financial information contained in published financial statements, with the aim of protecting users of these statements. Corporate governance is considered one of the most essential and necessary processes for any company to perform its functions fully and to ensure the integrity of its board of directors, as well as to guarantee the company's fulfillment of its obligations and achievement of its goals in a lawful and sound economic manner. Generally, the importance can be distinguished between its significance for companies and for shareholders (Nasr Ali & Shehata, 2007, pp. 28–29).

The Importance of Governance for Companies:

The importance of governance for companies is evident in that it:

- Enables the enhancement of the company's economic efficiency by establishing foundations for the relationship between company managers, the board of directors, and shareholders;
- Leads to openness to global financial markets and the attraction of a broad base of investors to finance expansion projects;
- Companies that apply governance rules enjoy increased investor confidence, as these rules ensure the protection of their rights.

The Importance of Governance for Shareholders:

The importance of corporate governance for shareholders is reflected in that it:

- Assists in guaranteeing the rights of all shareholders, such as the right to vote and the right to participate in decisions related to any substantial changes that may affect the company's future performance;
- Full disclosure of the company's performance, financial position, and key decisions made by senior management helps shareholders assess the risks associated with investing in these companies.

Additionally, the importance of governance lies in: (Suleiman, 2008, p. 15)

- Reducing the risks related to financial and administrative corruption faced by companies;
- Raising the performance levels of companies, thereby driving economic development and progress in countries;
- Enhancing the competitiveness of national companies globally and opening new markets for them;
- Providing the regulatory framework through which a company can define its objectives and the methods for achieving them.

The Reality of Corporate Governance in Algeria:

The issue of governance, in general, was not initially raised for discussion in Algeria. However, following persistent pressure from international financial institutions, led by the International Monetary Fund and the World Bank, it became necessary to adopt governance principles both at the macro level in economic management and at the micro level in institutional management. This prompted the state to form a committee called the "Good Governance Committee," which some considered merely formal and primarily aimed at appeasing external parties exerting constant pressure.

Among the indicators suggesting the adoption of governance principles in Algeria are the following:

- **The Establishment of the National Body for the Prevention and Fight Against Corruption:**
  This body was created pursuant to Article 17 of Law No. 06-01 dated February 20, 2006, concerning the prevention and fight against corruption. Article 20 of the same law defined the missions of this body, which are as follows: (Official journal, 2006, p. 4)
    - ✓ Proposing a comprehensive anti-corruption policy embodying the rule of law and reflecting integrity, transparency, and accountability in the management of public affairs;
    - ✓ Providing guidance on corruption prevention to any individual, public or private entity;
    - ✓ Developing programs to raise public awareness of the harmful effects of corruption;
    - ✓ Collecting and centralizing all information that may contribute to uncovering acts of corruption and preventing them;
    - ✓ Internationally assessing the effectiveness of legal instruments and administrative procedures aimed at preventing and combating corruption;
    - ✓ Periodically receiving asset declarations from public officials;
    - ✓ Utilizing the public prosecutor's office to gather evidence and investigate facts related to corruption;
    - ✓ Ensuring the coordination and monitoring of activities and operations in the field.

Recently, this body joined the Arab Anti-Corruption and Integrity Network (ACINET), established in 2008, thereby becoming part of a group that includes 42 ministries and other bodies in the Arab region (ACIAC, 2013).

- **The Convening of the First Conference on Corporate Good Governance in January 2007:**

This conference served as a valuable opportunity for all active stakeholders in the corporate world to come together, representing the first scientific recommendation and step taken toward this goal (Ben Abderrahmane & Ben Cheikh, 2013, p. 4).

- **The Establishment of a Corporate Governance Working Group:**

Algerian business associations and federations took the initiative to explore ways to encourage the adoption of new governance practices within the business community, with the aim of attracting foreign direct investment. To lead this process, stakeholders from both the public and private sectors established in 2007 a Corporate Governance Working Group. This group worked in collaboration with the Global Corporate Governance Forum (GCGF) and the International Finance Corporation (IFC) to develop a Corporate Governance Guide for Algeria (Youb, 2017, pp. 92–93).

- **The Issuance of the Algerian Corporate Governance Guide:**

The 2009 Corporate Governance Guide in Algeria, titled the "Charter of Good Governance in Algeria," is derived from the principle that prudent management practices and measures are codified within the Charter, forming a reference for all stakeholders in the corporation. It serves as a practical and simplified tool to incorporate the fundamental principles

of good corporate governance, aiming to initiate a process for the practical implementation of these principles. The Charter is positioned within the context of the existing legal and regulatory framework and aligns with its provisions.

- **The Governance Support Program in Algeria:**

A program for supporting economic governance, called "SPRING," was implemented in Algeria as part of the Governance Support and Implementation Program, funded by the European Union with an allocation of 10 million Euros. By December 2013, 63% of the funds had been utilized. The program was planned for a five-year period, ending in December 2018. It focused on assisting Algeria in improving economic governance, combating corruption, promoting democratic governance, and enhancing access to quality economic resources.

- **The Governance System in Algeria:**

Many studies, conferences, and symposiums held in Algeria have concluded that there is no effective application of governance principles in the country; rather, what exists is a form of random management. In order to establish a sound governance system in Algeria, there must be coordination among the following four elements:

- ✓ **Values:** Participation among individuals;
- ✓ **Structures:** State structures, ministries, and all state institutions;
- ✓ **Management Frameworks:** Methods of managing operations, equipment, raw materials, information, and human resources;
- ✓ **Means or Methods:** Including the state's policies, programs, and projects.

Moreover, there is no vision for the future, as there are no structures capable of anticipating new variables, and the management system currently in place remains administrative in nature. It should instead be based on a system focused on achieving desired results. Unfortunately, Algeria's management system is still far from this ideal (Miloudi, 2018, p. 151).

Today, Algeria ranks among the last countries in terms of corruption levels, according to Transparency International's Corruption Perceptions Index for 2018, where it ranked 105th out of 180 countries. This highlights that the implementation of governance mechanisms in Algeria remains weak despite the efforts exerted. This is due to several factors, including the legacy of centralized economic planning, excessive bureaucracy, and entrenched favouritism, all of which have contributed to the weakening of institutional development.

Amidst all these conditions, Algeria is witnessing the opening of its economy and is continuously striving to improve the business climate within a competitive environment. It has restructured all sectors and reformed the accounting system to lay the foundations for the four governance principles set forth in the "Algerian Charter." As a result of these restructuring efforts, the private sector has emerged and grown across all fields. Enhancing corporate governance will contribute to business expansion, improve the business climate, and support the recovery of the national economy.

Obstacles to the Application of Corporate Governance Principles in Algeria

There are several obstacles that hinder the effective implementation of corporate governance principles in Algeria. These obstacles may arise from within the company itself or from external factors, and they can be summarized as follows: (Sbayhi, 2013, p. 668)

Internal Sources:

These are mainly related to the lack of separation between ownership and management. In most global economies where corporate governance is effectively applied, companies strive to distance themselves as much as possible from family-owned businesses. It is not necessary for the Chairman of the Board or the Chief Executive Officer to be the individual holding the largest share of the company's stock or someone with extensive ties to shareholders. Rather, it is crucial that the chairman possesses a high degree of competence, efficiency, and effectiveness in managing the company.

Under this main obstacle, several secondary barriers emerge, the most notable of which are:

- **Board of Directors:**

The absence of a clear separation between the responsibilities of the Board of Directors and those of executive management, inadequate oversight levels, and an insufficient number of board meetings.

- **Board Members:**

The lack of a sufficient number of independent, non-executive directors on the Board who are capable of providing independent opinions and judgments, stemming from their sense of responsibility, experience, and understanding of the company's operations.

- **Board Committees:**

Particularly the Audit Committee, the Compensation and Nominations Committee, and the extent of their effectiveness and independence, including the presence of independent non-executive members within them.

6.2 External Sources:

These relate to the general investment climate in the country and the extent to which laws and regulations governing economic activities are available, ensuring that the implementation of corporate governance within companies is mandatory and that there are no contradictions with these laws.

Challenges to the Application of Corporate Governance in Algeria

The practical application of governance faces a set of challenges that can be summarized as follows: (Sbayhi, 2013, pp. 668–669)

Corruption:

The emergence of corruption is often linked to the absence of governance, leading to numerous serious and negative consequences. The spread of corruption resulting from the lack of governance causes the flight of foreign investments. Additionally, corruption incurs other economic costs, such as the reduction of government spending on socially-oriented projects and the worsening of resource misallocation.

The biggest challenge facing the implementation of governance is the expansion of corruption to include government agencies that are originally tasked with combating corruption. Corrupt governments often resist legislative reforms, aiming to maintain the corrupt environment from which they derive significant benefits.

Practical Implementation and Democracy:

While developing and emerging economies attempt to apply governance properly and effectively, they must simultaneously work on establishing the foundations of democracy, which brings several positive effects:

- Democracy serves as an automatic mechanism for the peaceful transfer of power, based on principles of pluralism and freedom, which act as barriers against any party or political force monopolizing power, thereby narrowing the scope of corruption and its negative impacts;
- Democracy provides legislative and parliamentary councils with the opportunity to perform their oversight and legislative duties independently and without any external pressures.

Respect for the Rule of Law:

Nothing can be effective unless it complies with the law, and the same applies to governance. Governance cannot exist without supportive and protective legal frameworks. The importance of the rule of law lies in its role as one of the key tools in attracting foreign investment. However, there may be contradictions between legal texts, thus special attention must be given to important elements to bridge the gap between law and its practical application, including: clarity, specificity, commitment to enforcement, and the establishment of rewards and penalties.

Establishing a Sound Relationship Between Stakeholders:

The acts of collusion and corruption between boards of directors and senior executive managers not only harm the rights of stakeholders but also endanger the company and its future.

Thus, it is crucial to implement a set of procedures and policies aimed at protecting the rights of stakeholders within the company.

Measures to Improve Corporate Governance in Algeria

For corporate governance to be properly implemented, a set of procedures must be adopted, forming the foundation of a corporate governance system aimed at improving institutional performance. These measures are as follows: (Sbayhi, 2013, p. 669)

Short-term Measures:

- The company must adopt a **written corporate governance policy** that is disclosed and announced. This policy should explain the establishment of the board of directors, the roles and qualifications of its members, and the creation of an advisory board.

  It should also clarify communication channels with minority shareholders and how they are treated, accounting and disclosure systems, the treatment of other shareholders, the appointment of independent auditors, and the publication of a timeline for company events;

- The corporate governance policy must stipulate the establishment of an **advisory board** composed of three to four members.

  The purpose of creating an advisory board is to assist in decision-making by providing management and the board with objective and independent perspectives, and to offer potential candidates for independent board member positions to the shareholders;

- The company must appoint a **delegated board member** chosen from among the market's experts;

- The company must adopt and publicly disclose a **corporate social and environmental policy** directed towards citizens;

- All essential company documents must confirm and guarantee **equal treatment of minority shareholders**, including internal regulations and the company's bylaws.

Medium-term Measures:

The corporate governance policy should aim to form the advisory board within one year, holding four meetings annually.

The company must establish a schedule for these meetings and prepare the necessary documents, which should be delivered to advisory board members before the meetings.

The corporate governance policy should include the following:

- Appointment of an **independent, non-executive board member** within two years (who can also be part of the advisory board);
- The company must disclose, in its **annual report to shareholders**, the contents and level of implementation of its written corporate governance policy and its corporate social and environmental policy towards citizens;
- The company must disclose, in its **annual report**, the degree of its compliance with corporate governance rules.

Conclusion

Corporate governance encompasses a blend of regulatory frameworks largely driven by the private sector. In countries with more advanced financial markets, governance rules, regulations, and structures are incorporated into laws that protect private property rights and shareholder interests. These are complemented by legislative provisions, regulatory rules, judicial decisions, and stock exchange registration requirements, forming an essential governmental infrastructure for corporate governance.

In addition to formal rules, companies adopt best practice principles and guidelines, which are continuously developed by the private sector and academia in response to prevailing market conditions and investor demands. Developing countries must take both elements into account, governmental infrastructure and best practices, as they seek to establish a corporate governance framework capable of enhancing investor confidence, attracting capital, and thereby promoting investment and economic growth. Of course, these principles must be adapted and modified to fit local needs, without neglecting the fundamental principles proposed by the Organisation for Economic Co-operation and Development (OECD).

From the above, the following conclusions can be drawn:

- The concept of governance is relatively new in usage and application; its understanding remains inconsistent among countries, especially Arab countries, due to the prevalent governance and management styles.
- Governance requires significant resources for effective application, which can be challenging given the scarcity of resources in some countries.
- Governance reform is a serious endeavour that demands strategies and methods to overcome the obstacles hindering economic development.
- Governance cannot be established without the rule of law, genuine democracy, political pluralism, and popular oversight.
- It is not possible to rely solely on the current legislative frameworks to implement governance in Algeria. Laws must be clear, consistent, easily applicable, and not open to dual interpretations, with all stakeholders participating in their formulation.

Key Recommendations

- Develop an effective mechanism to ensure a sufficient level of transparency for shareholders, allowing them to understand their rights and obligations through the company's founding documents;
- Establish regulations requiring companies to increase transparency and disclose all information related to company activities;
- Create harmony and alignment among the newly developed regulations and systems designed to address current economic requirements and developments;
- Devise means to combat the manipulative practices some company administrations resort to;
- Equip boards of directors and specialized personnel across various fields to enhance the oversight capacity of committees monitoring executive management activities;

- Clearly define the competencies and responsibilities among related entities to prevent overlap, conflicts, and disputes;
- To meet the requirements of good governance in Algeria, comprehensive development must be achieved across all sectors, including human development, political development, economic development, administrative development, social development, and technological development.

Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

Acknowledgement

The author would like to express sincere appreciation to the Faculty of Economic at the University of Ghardaia for providing access to legal resources and institutional support throughout the preparation of this research.

References

1. ACIAC. (2013, July 11). *Algeria Joins the Arab Anti-Corruption & Integrity Network*. Retrieved April 10, 2025, from Regional Project on Anti-Corruption and Integrity In the Arab Countries: https://www.undp-aciac.org/resources/ac/newsDetails.aspx?nid=1128
2. Bakkour, D. (2013, 12). Un essai de définition du concept de gouvernance. *lameta univ-montp1*.
3. Ben Abderrahmane, N., & Ben Cheikh, S. (2013). The reality of governance in Algeria's business environment in light of current developments. *Corporate governance mechanisms and the requirements for achieving sustainable development.* Ouargla. ALGERIA: Kasdi Merbah University. Retrieved from https://dspace.univ-ouargla.dz/jspui/handle/123456789/7602
4. Ben Saha, A., & Boukhari, A. (2013). The role of corporate governance in qualifying and integrating the Algerian economy into the global economy. *Institution governance mechanisms and requirements for achieving sustainable development.* Ouargla. ALGERIA: Kasdi Merbah University. Retrieved from https://dspace.univ-ouargla.dz/jspui/handle/123456789/7647
5. Briano-Turrent, G., & Rodríguez-Ariza, L. (2016). Corporate governance ratings on listed companies: An institutional perspective in Latin America. *European Journal of Management and Business Economics, 25*(2), 63-75. https://doi.org/10.1016/j.redeen.2016.01.001
6. DJOUADI, S., & BENAMARA, N. (2018, December 28). The impact of the application of governance mechanisms on the financial performance of Takaful insurance companies. *Algerian review of economic development, 5*(2), 97-111. Retrieved from https://asjp.cerist.dz/en/article/71200
7. Faddaoui, A. (2014). *The role of corporate governance pillars in reducing creative accounting practices. Algeria.* Annaba: University of Badji Mokhtar Annaba. ALGERIA.
8. Ghadban, H.-D. (2013). *Contribution to proposing a model for corporate governance in Algerian economic institutions.* Biskra. Algeria: Mohamed Khider University.
9. Khalil, A., & Al-Ashmaoui, M. (2008). *Institutional governance (an entry point to fighting corruption in public and private institutions.* Cairo. Egypt: Al-Hurriya Library for Publishing and Distribution.
10. Miloudi, M. (2018). The reality and challenges of corporate governance in Algeria. *Journal of Economic Studies, 12*(3), 146-155. Retrieved from https://asjp.cerist.dz/en/article/62828
11. Nasr Ali, A., & Shehata, S. (2007). *Auditing and corporate governance in contemporary Arab and international business environments.* Alexandria. Egypt: Al-Dar University Press.
12. Official journal. (2006, February 20). Law 01-06 on the prevention and fight against corruption. *Issue 14*.
13. Sbayhi, N. (2013). The reality of governance in selected countries with a focus on the Algerian experience. *The role of governance in activating institutional performance and economies.* Chlef. ALGERIA: Hassiba Ben Bouali University.
14. Suleiman, M. (2008). *Corporate governance and the role of boards of directors and executive managers.* Alexandria. Egypt: Al-Dar University Press.

15. Talib, A., & Al-Mashhadani, I. (2011). *Institutional governance and strategic financial performance of banks.* Amman. Jordan: Dar Safa for Publishing and Distribution.

16. Thierry, W.-G., Perier, F., & Lépineux, F. (2003). *Developpement durable et gouvernement d'entreprise : un dialogue prometteur.* Editions d'Organisation.

17. Youb, A. (2017). The level of application of governance principles in Algerian institutions. *Journal of Management and Economic Sciences Horizons*(01), 86-107. Retrieved from https://asjp.cerist.dz/en/article/79152

18. Zerzar, A. (2010). The impact of corporate governance rules on accounting disclosure and the quality of financial reports of companies. *Accounting governance of institutions - Reality, stakes, and prospects.* Oum El Bouaghi. Algeria: University of Oum El Bouaghi.

RESEARCH ARTICLE

Historical Perspectives on Education in Medieval Azerbaijan (10th–16th Centuries): Curriculum, Methodology, and Student Mobility

Akbar N. Najaf
Independent researcher
Researcher of General Medieval Turkish History
Azerbaijan, Baku
Email: ekbernecef@gmail.com

Rahil Najafov
PhD.
IMCRA Azerbaijan – International Meetings and Conferences Research Association
Azerbaijan, Baku
E-mail: rnacafov@gmail.com, Orcid Id: 0000-0003-2460-6333

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords education, lesson, school, madrasa, student, training, teacher, book, waqf, library

Abstract

In contemporary local and international historiography, aspects of the history of education in medieval Azerbaijan have been studied in general terms. Existing research primarily focuses on educational institutions (madrasas and Sufi lodges) and certain cultural fields such as science, literature, and architecture. This article examines previously under-researched topics in Azerbaijani cultural history, including the duration and level of education, teaching methods, textbooks, libraries, academic calendars, scholarships for students, salaries for teachers, and the education and upbringing of orphans.

The rich cultural heritage of the Middle Ages has often been studied mainly through the lens of political and social events, leaving issues closely related to daily life in the background. However, material, religious, legal, and moral culture often preceded political developments. Historical rulers relied on defining and supporting their material and cultural resources. The fact that many medieval Azerbaijani rulers were also recognized as scholars or poets reflects the significance and level of education during that period.

Citation. Najaf A.N., Najafov R. (2025). Historical Perspectives on Education in Medieval Azerbaijan (10th–16th Centuries): Curriculum, Methodology, and Student Mobility. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 16–33. https://doi.org/10.56352/sei/8.11.2

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.04.2025 | Accepted: 21.07.2025 | Published: 01.09.2025 (available online)

1. Introduction

Sources indicate that cities in medieval Azerbaijan often contained multiple secondary and higher education institutions, large waqfs (e.g., Rabi-Rashidi), and even entire waqf cities (e.g., Qazaniyya). Madrasas employed numerous scholars and instructors and maintained large, well-known libraries, reflecting a relatively high public literacy level. Certain fields, particularly literature, political science (court and administrative schools), and medicine, were widely studied and developed.

Specialized schools existed to train state officials, civil servants, and even military personnel. Consequently, the Middle Ages saw a strong societal interest in education, countering modern historiographical assumptions that medieval populations were largely uneducated.

2. Diversity of Educational Fields

The medieval Azerbaijani education system was part of the broader Eastern Islamic educational framework, extending far beyond madrasas. Several characteristics stand out:

1. Education influenced all political and social sectors.

2. Educational opportunities and institutions were diverse.

3. Literacy and scholarly achievement conferred a special status in society.

4. State personnel policies relied on educated individuals in administrative and governance structures.

Mazahiri (1972) notes that from the 10th century onward, a significant transformation occurred in Islamic education:

"Until then, in the medieval Middle East, schools were limited to basic instruction in religious doctrines at mosques or in institutions such as the 'Dar al-Hikmat' (House of Wisdom), established by Muslim philosophers or Mu'tazilite scholars, which could be considered academies. No intermediate level of education existed between these two. Therefore, we must acknowledge that no organized general education system existed before the 10th century. The general population learned only religious doctrines, practical aspects of religion, and basic literacy and numeracy, while elite social strata—mostly theologians aligned with Mu'tazilite thought, rulers, and politicians—studied philosophy and exact sciences" (Mazahiri, 1972, p. 159).

3. Educational Institutions in Medieval Azerbaijan

From the 10th century onward, madrasa education coexisted with other forms of schooling. Key educational centers included:

- Schools and kuttabs
- Suffa
- Mosques and jamiʿ mosques
- Palaces and court schools
- Libraries and bookshops
- Houses of scholars (ʿulama)
- Literary centers
- Badia (desert education)
- Harem schools (for palace women)
- Madrasas
- Ribats and Sufi lodges

Among these, madrasas, palaces, and mosque-jamiʿ complexes were the primary institutions (Çelebi, 2013, p. 23). All were commonly referred to as *schools*. Since religious study centered on books, schooling initially meant reading-based learning. Over time, the term *school* expanded to include primary education (Makdisi, 2007, p. 58).

4. Specialized Forms of Education: Badia

A notable educational practice was *badia*, or desert education. Students seeking mastery of a language lived among nomadic tribes to gain immersive practical experience. For example, the 10th-century poet Sayyiduk, after completing his literary studies in Basra, spent ten uninterrupted years among Bedouin tribes to perfect classical Arabic. Contemporary sources described him as "the most renowned poet, lexicographer, and linguist" (Çelebi, 2013, p. 23).

Similar practices existed among Turkic peoples. Mahmud al-Kashgari, in his *Divanü Lügati't-Türk* (1072–1074), collected many words from nomadic Turkic tribes, illustrating the practical and immersive approach to education in the medieval period.

5. Education Duration and Level

The concept of schooling in medieval Azerbaijani schools was not limited to providing basic education, as commonly assumed. A student receiving instruction at a school or kuttab often attained literacy sufficient to author works. For instance, Muhammad, the son of Dawud ibn Ali al-Zahiri, founder of the Zahiri school of thought, received kuttab

education yet produced the renowned work *Kitab al-Zahra* at the age of 15. Similarly, in the 11th century, a poet from Wasit began serving in a governmental secretariat after completing his school education.

Yaqut al-Hamawi, of Roman origin, authored the encyclopedic work *Kitab al-Buldan* despite being born into slavery. He learned reading and writing from his merchant master, who subsequently sent him to school. Initially working for his master and later as a merchant and bookseller (sahaf) after the master's death, Yaqut produced a multivolume work containing significant information about Azerbaijan, testifying to the high quality of primary education (Brockelmann, 1942, pp. 249–250). These examples highlight the **advanced educational standards** maintained in schools and kuttabs.

Students were primarily guided by a master scholar regarded as an expert in the literary sciences, effectively preparing them for higher education. Education in these institutions rarely lasted less than ten years. Considering that Ahmad ibn Ali al-Zawwal (1115–1190), a descendant of Caliph Ma'mun, left school at age 14 after ten years of study, it can be inferred that primary education for Muslim children typically began at 4–5 years of age and rarely exceeded 7–8 years (Makdisi, p. 59). However, individuals who could not pursue literacy during childhood could enroll in schools at any age, as Yaqut al-Hamawi did.

To ascertain the duration and level of education in the Eastern Islamic world, including Azerbaijan, references can be made to Yaqut al-Hamawi's accounts of the Ghaznavid Sultanate (962–1187) and the autobiography of the famous historian Beyhaqi. According to Hamawi, Abu'l-Fazl Beyhaqi had received instruction in **grammar, lexicography, and literature-poetry** by the age of 15, studying 11 books that included fiqh (Islamic law), natural sciences, astronomy, and an Arabic-Persian dictionary covering earthly beings (Makdisi, p. 59). This indicates that schools imparted **foundational scientific terminology and knowledge**.

Graduates could continue with **10–11 years of higher education**, primarily necessary for professional fields requiring advanced expertise, such as fiqh (law) and medicine (tibb). The 12th-century Central Asian historian, muhaddith, theologian, and philologist Abu Sa'ad Abd al-Karim ibn Muhammad al-Samani al-Marwazi (1113–1167) provides valuable insights into the excellence of Islamic education. His work *Kitab al-Ansab* (Book of Lineages) documents over a hundred Azerbaijani scholars, reporting that after ten years of school and 10–11 years of madrasa study, hundreds of scholars from cities including Urmia, Khoy, Ardabil, Maku, Nakhchivan, Shamakhi, Ganja, and Beylagan served across regions from Cairo to Shash in roles such as secretaries, physicians, judges, and madrasa instructors (N. Aliyeva, 2010, pp. 91–133).

The **quality and level of education** in Azerbaijani schools and madrasas, as well as in waqfs and palace institutions, matched those in other major Islamic cities. Evidence from the prominent Arab scholar Ibn Makulan (1030–1082), who visited Ganja, highlights the mosque, madrasa, and library, listing 55 Azerbaijani scholars and shedding light on the intellectual environment (N. Aliyeva, 2014, p. 20).

High-level educational institutions in Azerbaijani cities were already established by the 7th–8th centuries, as reflected in *al-Ikmal fi Asma' al-Rijal* by the Tabrizi scholar Waliuddin Abu Abdullah Muhammad ibn Abdullah al-Amri, which covers the biographies of 8th-century Azerbaijani thinkers. Additionally, *Kitab al-Mushtarak* documents 21 Azerbaijani localities and mentions their educational centers (N. Aliyeva, p. 62).

From the 11th century onward, during the Seljuk and later Atabeg periods, Azerbaijan hosted schools, madrasas, and palace institutions recognized throughout the Eastern Islamic world. Researcher Nargiz Aliyeva has compiled a list of higher education institutions from this period, including madrasas in Ganja, Shamakhi, Beylagan, Maragha (Atabegs, Qazi, Ahmadaga), Zanjan, Nakhchivan, Marand, and Khoy (N. Aliyeva, 2015, pp. 67–74, 78, 84–86).

During the periods of the Jalairids, Qara Qoyunlu, Aq Qoyunlu, and Safavids, a significant number of madrasas operated in Azerbaijan. Examples include the Taj al-Din Shah Alishah Madrasa, the Qiyasiyya Madrasa founded by Rashid al-Din's son Qiyas al-Din Muhammad, the Amir Shaykh Hasan Jalairi Madrasa, the Shaykh Uways Madrasa, the Sultan Ahmad Jalairi Madrasa, as well as the Muzaffariyya and Bayim Madrasas constructed by Khadijah Bayim, the wife of Shahanshah. Each of these madrasas trained specialists in various fields of knowledge. For instance, the *Madrasa-i-Tibb* established in the village of Malham in Shamakhi, which operated for many years, served both as a high-level medical education center and a hospital. This center was founded by Qafiyaddin Umar ibn Osman, the uncle of the renowned poet Khaghani. Considering Qafiyaddin's connections with the Shamakhi madrasa, it can be inferred that there was a form of student exchange among madrasas at the time (N. Aliyeva, 2015, p. 86).

Research indicates that the **duration of primary education** for those desiring to study did not exceed 10–11 years. However, it cannot be claimed that all students completed the full course. The majority, as noted by Ali Mazaheri, likely left after acquiring fundamental knowledge in religious sciences. After completing school and kuttab education, higher education commenced, typically lasting a minimum of 10–11 years. Those who obtained an *ijazah* (diploma) following this period were employed in hospitals, madrasas, or the legal system. This suggests that the **average educational trajectory of a specialist** lasted no less than 20 years. Thus, a child starting school at 4–5 years old could potentially graduate from a higher education institution by age 25. Some scholars, however, extended their studies beyond this period; for example, Beyhaqi completed his education at the age of 37, implying over 30 years of study (Makdisi, p. 60).

Differences in higher education duration also depended on the **rank and significance of the school**. Divan schools, for instance, functioned akin to universities specializing in political administration, training personnel who would serve in roles ranging from secretaries to viziers. Sultans also trained officials acquired as *qulam* (slaves) for military, political, and security services in these schools. Nizam al-Mulk notes in *Siyasatnama* that these *qulam* rarely assumed official positions before the age of 30 (Nizam al-Mulk, 1999, p. 74; N. Akbar, 2017, p. 160). Divan schools emphasized mathematical sciences. Abu Ja'far ibn Shirzad, who lived in the 10th century, reports continuing his divan school education until age 20, noting that his older brother studied there as well (Makdisi, p. 76).

Education at a palace or divan school was a primary means of entering and advancing within the state system. For example, during the Fatimid period, it was customary for officials to send their sons, who had received basic literary education, to divan schools to learn secretarial skills. Here, students engaged with literature and developed intellectual interests. This account, recorded by Qazi Fazil al-Baysani—who later became a vizier in the Ayyubid state after serving as a high-ranking official under the Fatimids—is significant, as he himself had been admitted to the divan school by Ibn al-Khallal during the Fatimid period through a rigorous examination (Ibn Khallikan, 1948–1949, pp. 219–220). Admission exams were highly demanding, requiring sophisticated analytical reasoning. Baysani's examination included analyzing two incidents from *Hamasa*, converting selected poetry into prose, and, if necessary, performing similar exercises for an entire book (Ibn Khallikan, 1948–1949, p. 220). It is noteworthy that Baysani's father held a high-ranking position as the Qadi of Palestine, emphasizing the meritocratic nature of these examinations (Ibn Khallikan, 1948–1949, p. 224).

These observations suggest that the **medieval education system** was structured in two main tiers:

- **First tier (Talim):** Foundational education, comparable to contemporary secondary and undergraduate schooling. Graduates could serve as low-level officials, secretaries, hold religious positions, or work in various scientific disciplines.

- **Second tier (Suhba):** Advanced education, equivalent to modern master's and doctoral studies. Graduates of suhbha, considered highly qualified, could occupy top-level positions in state and religious institutions, including vizierates, judiciary, divan leadership, teaching, medicine, jurisprudence, librarianship, and diplomacy.

6. Academic Year Opening

The academic year in schools and madrasas was **formalized by the 11th century**, often marked by ceremonial events. This practice was partly motivated by ruling elites viewing such ceremonies as a symbol of prestige. Opening lectures were important not only for instructors but also for local qadis, judiciary officials, and scholars. Newly appointed teachers would deliver their **first lessons before large audiences**, often attended by representatives from all social strata (Makdisi, p. 235).

Scholars appointed to schools or madrasas could address **various topics or multiple issues within a single topic** during their inaugural lecture. Accordingly, the instructor had the authority to select the subject and deliver a lecture on it. Since the opening of the academic year was a ceremonial event, **various types of sweets were prepared in the courtyards of madrasas, mosques, and jami's**, which were then distributed to all educational institutions and charitable organizations in the city. The **number of attendees at the opening lecture** was simultaneously considered an indicator of the scholar's reputation and intellectual standing. A large audience signified the scholar's high scientific literacy and prestige, whereas a small audience suggested public indifference toward the instructor's expertise. If attendance was insufficient, it indicated that the teacher's professional activity might be ending; the

scholar could be reassigned, temporarily relieved of teaching, or granted additional time for self-improvement (Makdisi, p. 238).

Opening lectures also served as an **evaluation of instructors' skills**, teaching levels, approach to questions, and analytical abilities. The primary focus was to determine whether the scholar could express original ideas and introduce innovative approaches before the public. A hallmark of the educational system was the **critical engagement with texts**, emphasizing that teachers should not merely recite or propagate previous works (Makdisi, p. 247). In this system, students and their families effectively tested whether a scholar's knowledge was endorsed by the community. Considering that **all local scholars, jurists, state officials, and secretaries** attended these lectures, the evaluations were highly demanding. Some instructors attracted such attention that scholars and teachers from other regions also attended. The **most favorable periods for mass attendance** were during the Hajj season, suggesting that the academic year often began in months coinciding with Hajj (Keleş Mahmud Resep, 2016, 4(8), pp. 158–159).

Prominent scholars were sometimes **invited by administrators to teach at their madrasas**, and acceptance of such invitations could enhance the city's intellectual reputation. For example, in 1273, the vizier Parvana of the Anatolian Seljuk state invited the eminent Ilkhanid scholar Qutb al-Din Shirazi to the madrasa he had established in Kayseri, having witnessed his intellectual talent and moral stature in Sadr al-Din Qunawi's *Jami' al-Usul* lectures (Kaymaz N., Pervane Muinüddin Süleyman, 1970, p. 185).

This competition among madrasas, cities, and administrators meant that the arrival of a celebrated scholar could transform a city into a **major intellectual hub**, with far-reaching social, cultural, and economic implications. It could influence trade and pilgrimage routes, as caravans would redirect through the city. Ceremonial events provided both the instructor and the city's administration an opportunity to **promote their prestige**, and administrators often provided additional material and moral incentives to retain prominent scholars.

Medieval authors, particularly those writing autobiographies, often **planned travels** to witness the lectures of renowned scholars. If Ibn Maqkul, al-Samani, or Yaqut al-Hamawi visited Azerbaijan, their attendance reflected the influence of prominent instructors on their scholarly preparation. By the 11th century, there is evidence of increasing numbers of visiting scholars in Ganja, as reported by N. Aliyeva: "Some Arab-language authors traveled to the city, providing information about its mosque, library, educational institutions, hadith assemblies, and scholarly discussions" (N. Aliyeva, p. 31). Similar patterns can be observed in Tabriz, Shamakhi, Ardabil, and other cities.

7. Teachers and Students

In the medieval educational system, **hierarchies among teachers and students** varied according to their associated madrasas, schools, or kuttabs. Teacher rankings included:

- **Muid**
- **Mufid**
- **Mudarris or Darsiyam**

Student rankings included:

- **Talib-i 'Ulum (Sukhta, Softa)**
- **Danishmand**
- **Mulazim**

In addition to these ranks, both teachers and students could hold specific titles, such as **molla, 'allamah, qari, muhaddith, and faqih**. With the expansion of madrasa personnel and the improvement of the educational system, teacher rankings evolved. Each madrasa typically designated three instructors with ranks: **Ula (first), Saniyya (second), and Salisa (third)**.

As previously noted, **student education began around 14–15 years of age**. Children under this age were considered pupils attending basic schools. Students entering madrasa education at 14–15 typically attained a level of scholarly competence by 20–21, enabling them to debate, analyze topics independently, and lead student discussions (Anameriç Hakan, Rukancı Fatih, 2008, p. 40).

Educational Methodology

Education in madrasas relied primarily on a **deductive approach**, which was based on the teachings of scholars who had written works on specific subjects or expressed opinions on particular issues. This methodology involved **memorization (hifz), repetition, comprehension, discussion, and note-taking (daftar)**.

Memorization (Hifz) in Education

Memorization, or *hifz*, formed the foundation of the educational methodology. According to G. Makdisi, hifz "relied on the memorization of large amounts of material, its comprehension, and repeated review with intervals" (Makdisi, p. 241). Lessons in the Quran, lexicography, narration, jurisprudence (*fiqh*), and poetry were especially dependent on the student's memory. However, students with such exceptional memorization abilities were rare. For this reason, the scholar Shabi remarked, "If someone merely memorized what I have forgotten, they would be a scholar," highlighting the practical limits of memorization. Nonetheless, some students and scholars possessed extraordinary memory capacities; for instance, Makdisi reports that Khalaf al-Ahmar had memorized 40,000 couplets (Makdisi, p. 241).

Memorization was crucial in education. Al-Ghazali, after having his books looted during a journey, recalled having memorized all previously read works. Ziya al-Din Ibn al-Asir, who lived in the 12th–13th centuries, emphasized the importance of memorization, noting its necessity in particular contexts or times of need (Makdisi, p. 243).

Memory played a critical role in medieval education, especially in **jurisprudential rulings, hadith transmission**, and the dissemination of information in periods of limited written documentation. Linguist and historian Qazi Waki (d. 918) highlighted the importance of memorization in education:

"Students rise early in pursuit of knowledge,
This one day is immortalized in books,
I advance with enthusiasm and diligence,
The notebook is the heart, the ear a vessel" (Makdisi, p. 244).

Alongside memorization, **comprehension and discussion** were equally vital. These methods supported memorization by aiding retention of terms, words, and meanings. Discussion (*munazara*) was a primary technique, allowing students to interact with the instructor, who also evaluated students through questioning. On certain days, instructors held **public lectures**, during which students referenced memorized authorities to substantiate their arguments (Anameriç & Rukancı, 2008, p. 41).

Another essential tool in the educational methodology was **note-taking**. The *daftar*, a notebook, functioned as a repository of knowledge, assisting the reconstruction of memory. Note-taking was considered key to scholarly development (Makdisi, pp. 255–256). However, some scholars, such as Ibn al-Allaf (9th–10th century), expressed skepticism about relying on written knowledge, arguing in a lamentation:

"He entrusted knowledge to paper, and it was lost;Paper is a very poor place to preserve it" (Makdisi, p. 256).

While such criticisms existed, they do not diminish the fact that **millions of medieval literary works** were produced and preserved. A systematic approach to note-taking, called *fihrist*, provided concise summaries of sources and content. Al-Nadim's famous *Fihrist* exemplifies this methodology (En-Nedim Muhammad ibn Ishaq, 2017, p. 67).

8. Lessons and Textbooks

The establishment of the **Nizamiyya madrasa in 1067** as the de facto university of the Great Seljuks (1038–1157) marked a shift in education toward **transmitted (oral) sciences**. The emphasis on oral sciences aimed to reduce sectarian disputes in the Eastern Islamic world by channeling religious debates into educational institutions, leaving

scientific disagreements to scholars' judgment, and minimizing social unrest. Soon after, **rational sciences** were incorporated into madrasa curricula, broadening the academic foundation to include mathematics, medicine, astronomy, philosophy, rhetoric, arithmetic, geometry, lexicography, history, geography, grammar (*nahv*), and morphology (*sarf*) (Bilge Mustafa, 1984, pp. 41–43).

The Seljuks allowed each school of jurisprudence to develop its own curriculum and textbooks while also enabling graduates to serve in the state system. This educational reform helped **eliminate sectarian conflicts** that had fragmented the Eastern Islamic world during the 9th–10th centuries.

In the 11th–16th centuries, sufficient information exists regarding the **courses and textbooks** used in madrasas. In Azerbaijan, where Shafi'i, Hanafi, and Shia communities predominated, educational systems were adapted accordingly. Primary subjects included **Quran, Tafsir, Hadith, Fiqh, Usul al-Fiqh, Aqidah, Kalam, Rhetoric, Syntax and Morphology, Astronomy, Geometry, Arithmetic, and Philosophy**. Key textbooks included:

- Tafsirs: *Al-Kashshaf,* Qadi Bayzavi's Tafsir
- Sunni Hadith collections: *Kutubi Sitta*; Shia Hadith texts
- Fiqh: Abu Bakr al-Marginani, *Bidayat al-Mubtadi*
- Aqidah: Safar al-Hanafi, *Aqaid al-Tahawi*
- Usul al-Fiqh: Sadr al-Din Taftazani, *Talwih*
- Kalam: Nasir al-Din Tusi, *Tajrid al-Kalam*
- Rhetoric: Omar al-Abhari, *Isaqi*
- Astronomy: Muhammad al-Jaghmini al-Khwarazmi, *al-Mulakhkhas*
- Geometry: Shams al-Din Muhammad Samarqandi, *Ashkal al-Tasis*; Euclid, *Geometria*
- Arithmetic: Author unknown, *Risalat al-Bahaiyya*

Over time, both the **scope and academic depth** of subjects and textbooks expanded. During the Seljuk period, **Sufi studies** were incorporated into the curriculum. Works on Sufism by Shihab al-Din Umar Suhrawardi and 16th-century scholar Nematullah Nakhchivani, including mystical interpretations of the Quran, were also included among the textbooks.

9. Specialization and Curriculum in Madrasas

It should not be assumed that all madrasas offered identical courses or used the same textbooks. Similar to modern universities with multiple faculties and specialties, madrasas provided tailored curricula. Students in transmitted (oral) sciences were not taught natural sciences, and medical students did not study jurisprudence. For instance, the standard duration of study in medical madrasas was three years, during which students primarily studied the theoretical foundations of medicine.

In the **first year**, students studied:

- Hunayn ibn Ishaq, *al-Masail fi al-Tibb* and *Madhal fi al-Tibb*;
- Hippocrates, *Fusul al-Buqrāt* and *Ma 'ush-sha'ir*;
- Medical treatises of Nili Nishaburi.

These texts introduced students to the basics of medical science and shaped the identity of a practitioner.

In the **second year**, students studied:

- Al-Razi, *Kitab al-Tibb al-Mansuri*;
- Galen, *Sumeria Alexandrionorum* (16 articles) and *Tashrih-i Bozorg*;
- Sabit ibn Qurrah, *Zahira*;
- Abu Bakr Aswi, *Hidaya*;
- Ahmad Faraj, *Kifaya* or *Ahliya*;
- Sayyid Ismail ibn Hasan al-Jurjani, *Zahira-i Kharimshahi*;
- Sahli al-Masihi, *Sad Bab*.

In the **third year**, students studied:

- Al-Razi, *Kitab al-Khawi*;
- Ali ibn Abbas al-Majusi, *al-Kitab al-Malaki*;
- Ibn Sina, *al-Qanun fi al-Tibb* (Keykavus, Kabusname, 2003, pp. 178–179).

In addition to these, there were sixteen essential reference works frequently consulted by both students and physicians, including: *Kitab al-Firaq*, *Kitab al-Sina'a*, *Kitab ila Tusren fi al-Nabz*, *Kitab ila Aqlukan fi al-Ta'nni li Shifa'i-Amraz*, *Kitab al-Maqalat al-Khums fi al-Tashrih*, *Kitab al-Astukussat*, *Kitab al-Mizaj*, *Kitab al-Kuwa al-Tabiyya*, *Kitab al-Ilal wal-Amraz*, *Kitab Tuarrifu ilal al-Aza al-Batina*, *Kitab al-Nabz al-Kabir*, *Kitab al-Humeyyat*, *Kitab Ayyum al-Buhran*, *Kitab al-Buhran*, *Kitab Hilat al-Bar*, *Kitab Tadbir al-Asihha* (Kifti, 1903, p. 129).

The **practical phase of medical education** occurred in hospitals (*bimaristan*), where students applied theoretical knowledge and gained experience to qualify as physicians. During practical training, students acquired knowledge on patient psychology, hospital organization, hygiene, drug preparation, and the use of medicinal plants and minerals. A competent physician needed detailed knowledge of twelve categories of medicines, including syrups, jams, ointments, plasters, tablets, pastes, essences, decoctions, poultices, powders, opiates (panzahr), and pills (Mehmed, 2014, pp. 73–78).

From the Ilkhanid (1258–1359) and Timurid (1370–1507) periods, madrasas emphasized **astronomy, medicine, and mathematics** (Eshenkulova, 2001, pp. 99–148). The establishment of the world's largest observatory in Maragha during the Ilkhanid era demonstrates this commitment (Köprülü, 1942, pp. 208–227). Additionally, construction of the Shamb-i-Qazan and Rabi-Rashidi complexes in Tabriz during Qazan Khan's rule (1296–1304) further confirms this focus (Özgüdenli, 2003, I, pp. 105–126).

Orphanages and Education of Destitute Children

Destructive invasions and wars in the medieval period often caused humanitarian crises, including children orphaned by the loss of family heads. States took measures to care for these children, frequently entrusting them to **waqfs** or establishing orphanages. In medieval Azerbaijan, two state-supported orphanages are documented, both founded during the reign of Ilkhanid ruler Qazan Khan (1294/5–1304) within the Shamb-i-Qazan and Rabi-Rashidi complexes in Tabriz.

One orphanage within the Shamb-i-Qazan complex initially accommodated 100 children, later expanded to house street-found children. Annual expenses for care, clothing, food, and education were funded by the Shamb-i-Qazan waqf. Qazan Khan's decree also provided for children's festival allowances (*eydi*) and the salaries of caretakers. Children, beginning education around 4–5 years of age, were taught skills to secure employment later (Rashid al-Din, p. 212–213).

The Shamb-i-Qazan orphanage had a substantial financial foundation, with all expenses covered by revenues from Qazan Khan's lands (*incu*). A dedicated divan managed these resources, supervised by prominent Ilkhanid officials, including Kur Taymur and Taramtaza (Özgüdenli, p. 167). The orphanage continued to operate beyond Qazan Khan's reign, surviving into the Jalayirid period. Sheikh Uways (1356–1375) was honored in *Qazanname*, authored by Khaja Nur al-Din ibn Shams al-Din Muhammad al-Ajdari, for maintaining the institution.

The second orphanage, within the Rabi-Rashidi complex, officially housed ten orphans but served many more destitute children. Sources note residential quarters for officials, poor and indigent families (*dar al-masakin*), a kitchen, food storage, a mosque (*Masjid-i Jami-yi Shahristan*), market, mint, and garden. Similar to Shamb-i-Qazan, all expenses for care, clothing, food, education, and festival allowances were financed by the Rabi-Rashidi waqf (Özgüdenli, p. 176).

10. Scholarship System

The historical sources do not provide complete information on whether students in schools received a fixed monthly stipend. However, it is incorrect to generalize this assumption for all students, as the expenses of the madrasa system were primarily covered by **waqfs** (charitable endowments).

It is likely that students studying in schools and *kuttab* (elementary Quranic schools) had their expenses funded by waqfs. Nevertheless, it is incorrect to assume that the influence of waqfs extended to all settlements. In many villages and towns, educational expenses were covered through donations, gifts, and especially annual contributions from **zakat** and **khums** collections. During the medieval period (11th–16th centuries), despite occasional economic crises, 1 **dinar** per month was sufficient to cover a child's education. This is confirmed by records from Tabriz orphanage waqf documents (*Waqf-nama-yi Rabi-Rashidi*, 1350 AH, pp. 139, 163, 214).

In these records, 1 *Tabriz ra'ic-i dinar* weighed 3 **miskals** (12.96 g) of silver. Its purchasing power corresponded to 7.5 **mann** (6.2 kg) of meat, 36 **mann** (29.9 kg) of refined wheat, or 12 **mann** (9.9 kg) of chickpeas. In contemporary terms, the monthly stipend for a child would range between approximately **$30–33** (*Waqf-nama-yi Rabi-Rashidi*, 1350 AH, pp. 141–142, 165, 168, 230).

Children in orphanages also received stipends. In the 13th century, this stipend equaled one-third of a sheep's price; 15 months of stipend could purchase a cow. Additionally, daily allowances of 10 **mann** (8.3 kg) and annual 2,650 **mann** (3,041 kg) of wheat bread were allocated (*Waqf-nama-yi Rabi-Rashidi*, 1350 AH, pp. 135, 158). It is probable that these funds were provided to the child upon leaving the orphanage.

In madrasas, stipends were ten times higher. Abu Ja'far ibn Shirzad, who lived in the 10th century, reported receiving a monthly stipend of 10 dinars, while his elder brother received 20 dinars while studying at a divan school (*Makdisi*, p. 76). During the Seljuk and Ilkhanid periods, 10 dinars per month sufficed for a student's expenses, as evidenced by the salary of a low-level madrasa teacher (*mullah*) of the time (Najaf Akbar, 2010, p. 381).

Before the formal stipend system existed, students sometimes earned money through manuscript copying. For example, a student copied three copies of Ibn Sina's *Kitab al-Shifa* and received 100 dinars for each copy, using the total of 300 dinars to complete his education (Zakariya Qazvini, 1370, p. 287). Sübki, a medieval scholar and teacher, recounted a case in which a student, lacking money, was taken by his teacher to a merchant to borrow 50 dinars. During this episode, the student fell in love with the merchant's servant girl. Eventually, the student's father sent him 600 dinars, which covered the borrowed sum, the bride price, and possibly household expenses with his future wife (Sübki, 1323–1324, vol. III, p. 163).

This example illustrates that in the Seljuk period, a student could cover debts, education, and marital expenses with 600 dinars. In addition to monthly stipends, daily funds for bread and meat were allocated. During the Ilkhanid and Jalayirid periods, a student's monthly stipend in Tabriz ranged from 25 to 30 dinars (Özgüdenli, 2006, p. 231).

11. Teachers' Salaries

By the late 9th and early 10th centuries, the historian and jurist Abu Ja'far ibn Jarir al-Tabari reportedly earned a monthly salary of 10 dinars for teaching (Fayda Mustafa, 2010, vol. 39, p. 315). During the Seljuk and Ilkhanid periods, ordinary teachers without significant scholarly reputation earned similar amounts. During Sultan Tughrul

Bey's reign (1038–1063), Ali Tanukhi, a teacher in the madrasa, received 60 dinars per month (d. 1055). In the Ayyubid period, chief madrasa teachers (*mudarris*) received 30 dinars per month, while other teachers (*mullahs*) earned 10 dinars. During the Ilkhanid era, salaries in Tabriz madrasas ranged from 150 to 360 dinars, with some *mudarris* earning up to 500 dinars (*Waqif-nama*, p. 166).

In the Rabi-Rashidi complex, salaries of selected scholars and teachers were as follows (Özgüdenli, p. 217):

Position	Monthly Salary (dinars)
Instructor of Rational Sciences	500
Physician	300
Hadith Instructor	150
Librarian	150
Teacher	120
Surgeon	100
Ophthalmologist	100
Muid (Hadith commentator)	100
Atabek (teacher for orphans)	60
Medical Assistant	30
Library Assistant	30

12. Student Numbers in Madrasas and Classes

On average, a school had no fewer than 10 students, though the number of students in madrasas varied depending on the institution. For instance, the Nizamiyya madrasa had approximately 6,000 graduates (Najaf Akbar, p. 381).

Interest in the lectures of prominent scholars was consistently high. The medieval madrasa system did not have a class structure comparable to modern institutions. Teachers would sit at the center of the lecture room, with students and attendees arranged in a circular formation around them. For example, 300 students reportedly attended the lectures of the renowned scholar Juwayni daily, increasing to 400 near the end of his life. Not all attendees were students; some were fellow scholars (Subki, vol. III, pp. 252, 255, 259).

It is also recorded that students traveled from Andalusia (Spain) to attend the Maragha observatory, which at the time was considered the largest scientific center in the world. The Atabek and Qazi madrasas in Maragha attracted both scholars and students, supplemented by another madrasa built by Fazlullah Rashid al-Din, which accommodated students from various regions of the Islamic world (Kazimi, 2008, p. 13).

13. Libraries

Libraries with tens of thousands of volumes existed both independently and within madrasas or observatories. By the 9th century, a private library had been established in Hamadan, used by Abu Tamman, who noted that it belonged to Abu al-Wafa and included works such as *al-Hamasah* by Khatib Tabrizi, covering the works of 300 Arab poets (Kazimi, 2008, p. 13).

Yaqut al-Hamawi mentions the famous library in Ganja, Azerbaijan, which contained a rich collection of books in Arabic and Persian. These libraries were generally open to visitors, who could read, copy, or study the texts. Visiting

scholars received ink and pens, while resident scholars were salaried. Libraries also hosted scholarly debates and discussions (Aliyeva, p. 68). Similar libraries existed in Shamakhi, Tabriz, and other cities.

During the Seljuk period, Hamadan's *Tughruliyya* madrasa maintained a large library. According to Kazimi, the Seljuks and Arab caliphs built higher education institutions and mosques in Hamadan. Scholars working in these schools were highly respected, and the *Tughruliyya* madrasa was constructed with a substantial library (Kazimi, p. 17).

For the Maragha observatory, approximately 400,000 books were collected from Baghdad, Damascus, and al-Jazira (northern Iraq). Nasir al-Din Tusi personally traveled twice to Iraq and Baghdad to gather books (Köprülü, pp. 222–223).

During the Ilkhanid period, a dedicated library called *Bayt al-Kutub* was established within the Rabi-Rashidi complex, located near the administrators' residence and directly managed by the waqf officials. A librarian and a *munavil* oversaw its operations. Books could be borrowed for one month by depositing their value, or visitors could copy the texts on site. Many of Fazlullah Rashid al-Din's works were preserved in this library. The waqf records indicate that the library had a special catalog and books were sealed to prevent theft. The Rabi-Rashidi library reportedly contained 60,000 volumes (Richard, 1361, pp. 343–346; Özgüdenli, p. 231).

During the Seljuk era, Sultan Sanjar's vizier, Aziz al-Din Abu Bakr al-Zanjani, established the *Aziziya* library, which housed 12,000 volumes (Erünsal, 2003, vol. 27, p. 19). Large libraries continued to exist during the Kara-Koyunlu, Aq-Qoyunlu, and Safavid periods. According to Kazimi, rulers in the 14th–15th centuries established royal libraries, including the libraries of Jahanshah, Uzun Hasan, Sultan Khalil, and Sultan Yaqub. Other libraries in Tabriz included the Nasriya School and the Hamza Bey Aq-Qoyunlu School (Kazimi, p. 31).

During the reigns of Shah Ismail and Shah Tahmasib, the *Muzaffariyya* library operated, initially headed by the poet Ismail Kamal and later by Amir Fasih (Kazimi, p. 32). It is also recorded that the Sheikh Safi tomb complex in Ardabil had a library, which was later looted by the Russians (Özgüdenli, 2006, pp. 275–288).

14. Permissions and Diplomas

The term *ijazah*, literally meaning "permission," was used to denote a diploma or certificate of higher education. In the medieval education system, graduates of institutions received diplomas indicating their academic level, degree, and specialization. Diplomas typically included the student's name and *kunya* (patronymic), along with the names of their principal and secondary instructors.

Ijazahs emphasized the value of knowledge, often citing Qur'anic verses and Hadiths to illustrate the significance of learning. For example, many diplomas quoted Qur'an 2:31: *"Allah taught Adam all the names"*.

The general structure of an ijazah included:

- Praise of God;
- Praise of the Prophet Muhammad and his companions;
- Definition and value of knowledge;
- Significance of the ijazah;
- Names of students and teachers;
- List of studied books and learned disciplines;
- Scholarly lineage tracing back to Adam;
- Request for the student to remember the teachers and mention them in prayers (*wafa*);
- Recommendation for the graduate to teach;
- Signature, date, and seal.

15. The Educational Sphere of Medieval Azerbaijan: Traveling Students

From the 8th century onward, scholarly travel in the Muslim world created significant mobility across a vast geography, from Turkestan to Andalusia. Groups of knowledge seekers, sometimes forming caravans extending up

to 25 kilometers, included scholars, students, dervishes, and narrators. Numbering in the thousands or even tens of thousands, these individuals traveled from city to city, madrasa to madrasa, seeking books and teachers.

A central question in the intellectual world of this period was: *"Does knowledge reside in books, or in teachers?"* Interestingly, those devoted to the book whose first revealed verse was "Read!" concluded that teachers held the primary role. Contemporary scholars argued that since books cannot speak for themselves, human intermediaries—teachers—were essential to transmit knowledge, establishing the superiority of teachers. However, finding an accomplished scholar and learning directly from them was not the ultimate solution. Why was this the case?

By the 9th century, prominent urban centers distinguished themselves economically and politically while hosting diverse populations of different ethnicities and nationalities. The long *nisbahs* (attributive titles) attached to names—such as *al-Bardai*, *al-Nakhchivani*, *al-Arrani*, *al-Shirvani*, *al-Khorasani*, and *al-Bitlisi*—reflected these diverse origins. Many spent half their lives traveling for the pursuit of knowledge.

This article seeks to explore the motivations and structures underlying this phenomenon.

16. The Student

The term *student* derives from the Arabic word *talab* (seeking). From the 9th century onward, it became the general designation for knowledge seekers (*talib al-ilm*) in the Muslim East. Medieval Islamic pedagogy was fundamentally based on the dynamic interaction between teacher and student. Learning often required *rihla* (travel).

An illustrative example is the life of Khatib Tabrizi. Upon acquiring the three-volume work *Kitab al-Tazhib fi al-Lugha* by al-Azhari, Khatib consulted surrounding scholars to understand the intricacies of the language and concepts. To gain full mastery of his queries, he was advised to study with al-Abul-Ala, residing near Ma'arra in Aleppo. Due to financial constraints, Khatib could not afford to hire transport, so he packed his books, pen, and paper into a bag and traveled on foot to Ma'arra (Ay, 1998, p. 66).

Khatib Tabrizi (1028–1109) lived 81 years, and his dedication and perseverance in pursuit of knowledge earned him recognition as one of the greatest literary figures of his era. With numerous works on linguistics and grammar, he is considered the foremost literary scholar of the East (Nesirov, 2011, pp. 262–263). Medieval sources mention hundreds of scholars who, like Khatib, devoted their lives to learning.

The pursuit of knowledge was considered humanity's highest aspiration. By nature, humans develop through learning, and unlike other creatures, they possess both existential and societal needs. Human virtues are expressed through fulfilling these needs, and value is measured by cultivated manners and intellectual refinement. Islam opened the doors of knowledge, ethics, and education to all people. Prior to Islam, knowledge was often restricted to the elite; Prophet Muhammad democratized learning, establishing it as a common heritage, thereby dramatically stimulating intellectual activity.

17. Azerbaijan's Role in the Golden Age of the 9th Century

The 9th century is often regarded as the golden age of Islamic scholarship. With urban development in Muslim cities, scientific and literary networks expanded across the Islamic world. Azerbaijan played a significant role in this cultural flourishing. Cities such as Barda, Tabriz, Ganja, Ardabil, Maragha, Ani, Divin, Derbent, Shirvan, Nakhchivan, and Varsan not only participated actively in intellectual and literary activities but also produced hundreds of scholars and thinkers.

For example, Abu Sa'ad 'Abdulkarim ibn Muhammad al-Samani (1113–1167), a 12th-century scholar, recorded in his biographical work *Kitab al-Ansab* the names of 120 prominent Azerbaijani scholars of his era, reflecting the region's rich intellectual legacy (Aliyeva, 2010, pp. 91–133).

18. Classification of Knowledge

In light of these circumstances, Muslim scholars began to categorize knowledge into two main types:
a) **Imitative knowledge** (*taqlidi 'ilm*)
b) **Conservative knowledge** (*muhafizkari 'ilm*)

In the first category, the most accurate knowledge was attributed to the Prophet, and therefore, emulating him was considered the measure of correctness. Since the Prophet was regarded as the ultimate source of knowledge, his words and actions represented the highest standards for education. Consequently, his statements and practices were to be imitated faithfully.

In the second category, the knowledge acquired through imitation had to be preserved without alteration; otherwise, deviation from the correct path would be inevitable. Accordingly, the foundational activity of Muslim scholars in the pursuit of knowledge was the quest for the Prophet's teachings. Since direct physical contact with the Prophet was impossible, obtaining reliable reports (*akhbar*) and verifying their accuracy became the primary motivation for scholarly travel. Ata ibn Abi-Rabah (d. 733), the foremost teacher of the Hijaz legal school, defined knowledge for his students in these terms: what he called *'ilm* consisted of the *hadith* (reports concerning the Prophet), while what he termed *ra'y* consisted of the interpretations and explanations derived from these reports (Ibn Sad, 1909, V:345).

19. Scholarly Travel

Travel in the medieval period, as today, imposed substantial financial burdens. The pursuit of knowledge could double or even triple ordinary travel expenses, as students had to cover food, clothing, transportation, and the costs of books, writing materials, and animals for riding. Despite these challenges, medieval students were undeterred. They included children of wealthy families, those who sold inherited property to fund their education, individuals like Xatib Tabrizi who carried all his belongings on his back to travel on foot, and young adolescents like Sahl ibn Abdullah who set out on a journey upon encountering a question they could not answer. Similarly, Yahya ibn Yahya al-Lays traveled across Eastern lands at age 28 to study *al-Muwatta*, a branch of fiqh.

Not all aspiring students came from urban centers or attended prestigious madrasas. Al-Samani, while listing Azerbaijani scholars, mentions individuals such as *Ushnui*, *Barzandi*, *Zanjuni*, and *Sabehi*, whose places of origin ranged from villages to uncultivated regions, demonstrating that financial and geographical constraints did not prevent the pursuit of knowledge (Aliyeva, 2010:96, 115–116).

From the 9th century onward, traveling scholars adopted distinctive clothing styles, most notably garments with wide sleeves. These sleeves contained large pockets lined with fabric, which students used to carry books, writing tools, and notes (Houari, 2016:75, note 7).

Students traveled without restriction, following the teachers who could provide the knowledge they sought. For example, the renowned 12th-century jurist Taj al-Din Abu al-Hasan Ali, though born and raised in Ardabil, traveled extensively to study under Qutb al-Din Mahmud Shirazi and Shams al-Din ibn al-Mu'izz for hadith, Rukn al-Din al-Hadisi for language and fiqh, Nizam al-Din al-Tusi for rhetoric, Sayyid Burhan al-Din Ubaydullah for philosophy and logic, Ala al-Din Numan al-Kharazmi for khilaf, Kamal al-Din Hasan Isfarahi for arithmetic, geometry, and astronomy, Salah al-Din Mus for algebra, and Shaykh al-Islam Siraj al-Din Hamza for specific fiqh matters (Nesirov, 2011:119).

Similarly, Abu al-Abbas Ahmad ibn Muhammad of Duveyn (10th century), a prominent scholar of his time, traveled as a student as far as Egypt. Abu Ishaq Ibrahim ibn Ahmad, another notable scholar, visited cities across Iran, Iraq, the Hijaz, and Khorasan in pursuit of knowledge (Nesirov, 2011:171). In some cases, students studied at multiple madrasas within a single country. For instance, Kamal al-Din Masud from Shabran, a court physician under the Timurids, attended numerous madrasas in Herat such as Ikhlasiyya, Govharshad, and Qiyasiyya, eventually becoming a teacher himself (Nesirov, 2011:250).

20. Educational Costs and Student Life

The cost of scholarly travel varied depending on a student's financial resources, destinations, and the fields of knowledge pursued. Among eminent scholars, Abdullah ibn al-Mubarak (d. 797) reportedly spent 50,000 gold coins inherited from his father on education. Kharija ibn Musab, a student of Abu Hanifa, spent 100,000 silver coins on his studies (Houari, 2016:76).

Educational expenses included tuition, travel, accommodation, and other necessities. For example, a student who began primary studies in Barda and wished to specialize in fiqh would identify the best teacher in Baghdad and undertake the journey to study there. If dissatisfied with instruction or discovering a superior teacher elsewhere, the

student would relocate, often incurring significant costs. Ali ibn Asim (d. 816) spent 1,000 dinars traveling from Wasit to Kufa for his education (Houari, 2016:77).

For many students, financial hardship meant traveling on foot. Abu Khatef al-Razi (d. 890) recounted:

"My first journey lasted seven years. I walked over 1,000 farsakhs. From Bahrain, I reached Egypt, then on foot to Syria. From Ramallah to Sham, from Sham to Antioch, from Antioch to Tarsus. Returning to Homs, I took the road to Raqqa, then a boat to Iraq. I had not yet turned twenty. In Basra, I stayed for eight months in 829. To feed myself, I began selling my garments. With nothing left, I continued with my companion to seek a teacher... Only water remained, yet we persisted in study... At day's end, I was so weak from hunger that I could barely stand" (al-Razi, I:363–364).

Hunger was perhaps the greatest trial. Some students sold their possessions, including clothing, to continue their studies. The renowned hadith scholar al-Bukhari nearly died of starvation in his lodging after selling everything, and Ahmad ibn Hanbal recalled being unable to travel to Rey for education due to a lack of 50 dirhams (Houari, 2016:81). Similarly, al-Zahabi recounts a student in Egypt who, for seven months of study, never tasted warm food and endured extreme deprivation, illustrating the harsh realities of medieval scholarship (Zahabi, XIII:265).

Eye disease was also common due to late-night study, as noted by Khawari Tuati: "Eye illnesses were a shared affliction of medieval scholars" (Houari, 2016:85). Dissatisfaction with teachers was frequent, and students sometimes criticized instruction for being too brief or limited. In *Maqamat*, Hamadani recounts a student describing the hardships endured in pursuit of knowledge:"– How did you reach knowledge? – I began searching and realized it was difficult. To attain it, I slept on the ground, used a stone as a pillow, stayed awake at night, and traveled continuously" (Hamadani, 1957:109).

21. The Azerbaijani Educational Sphere in the Medieval Period

These accounts demonstrate the vast educational network of medieval Azerbaijan, which encompassed the broader Eastern Islamic world. From the 8th century, and peaking in the 9th century, this region cultivated a class of scholars known as *adibs*, whose literacy and expertise permeated all aspects of life, including trade.

The Adibs *Class*

Professional Category	Practitioners / Enthusiasts
Envoys	Astrologers
Entertainers	Printers / Copyists
Divan Secretaries	Calligraphers
Court Preachers	Physicians
Court Poets	Jurists / Scholars
Viziers	Merchants
Official Historians	Archivists / Record Keepers
Tutors	Teachers

Source: Makdisi, G. (2009). Human Sciences in the Classical Islamic Era and Christian West, translated by Hasan Tuncay Besoglu, Istanbul: Klasik Yayınları, p. 280.

The integration of scholarly foundations into society led to the emergence of the *udeba*, a new societal model shaped by knowledge and cultural refinement. From the 10th century onward, Azerbaijani and wider Muslim societies

developed guilds, fraternities, and artisan associations under names such as *sinaat al-adab* and *khirfat al-adab*, reflecting the influence of exemplary *adib* figures (Makdisi, 2009:280).

The link between travel and knowledge fostered the development of new scientific disciplines. Muslim geography and historical sciences (*akhbar*) emerged as direct outcomes of scholarly journeys. The *rihla* (travel) literature became a primary source for geographic knowledge, with numerous works composed in this period. Observation-based scholarship, exemplified by al-Jahiz (d. 868), contributed to the recognition of empirical observation as a means of acquiring positive knowledge (Houari, 2016:98).

The pedagogical approach of travel, observation, and compilation encouraged scholars to disseminate their accumulated knowledge. Frederick S. Starr describes this process in *Lost Enlightenment*:

"The concept of a traveling scholar took deep root in medieval Europe, yet scholars were generally expected to remain in their hometowns or monastic institutions. In Asia, the situation was different. Following Greek philosophers after 300 BCE, the influx of Indian scholars, Jewish astrologers, Manichean sages, and Nestorian monks prompted reciprocal journeys. Centuries before Caliph al-Ma'mun established his library and research center, physical mobility, underpinned by idealism and opportunism, was integral to the life and thought of Central Asian peoples" (Starr, 2017:189).

By the 9th century, Azerbaijan's central location within a vast educational network positioned it as a bridge of knowledge. With the rise of the caliphate system, the region became a focal point for scholarly activity from the 11th century onward. From the 12th century, cities such as Tabriz, Nakhchivan, Ganja, and Shamakhi emerged as cultural and intellectual centers, laying the groundwork for Azerbaijan's continued responsiveness to modern scientific and cultural influences relative

22. Conclusion

In the medieval period, the Azerbaijani education system functioned as an integral part of a broad socio-cultural and commercial network. As examined in the preceding sections, each aspect of education was closely linked to economic and social spheres. The education system stimulated the development of various trades, including book production, binding, leatherworking, ink and inkwell manufacturing, pen-making, and paper trade. Additionally, the emergence and growth of crafts such as bookbinding, printing, calligraphy, and pen-making were closely tied to educational practices and standards.

Moreover, medieval Azerbaijani education was not limited to local contexts but formed a vital component of an extensive educational network spanning a wide geographic area. From the 11th to the 17th centuries, Azerbaijan served as a central hub within this system, playing a key role in shaping scholarly, cultural, and intellectual life in the region. The historical interplay between education, craftsmanship, commerce, and social development highlights the profound and multifaceted impact of education on medieval Azerbaijani society.

23. Acknowledgements

The authors would like to express their sincere gratitude to the institutions and individuals who contributed to the development of this research. Special thanks are extended to the archives, libraries, and digital repositories that provided access to primary and secondary sources on medieval Azerbaijani education. We also acknowledge the valuable insights and support of our colleagues and reviewers who helped improve the clarity and scholarly rigor of this study.

24. **Conflict of Interest.** The authors declare that there is no conflict of interest regarding the publication of this article. All opinions expressed in this work are solely those of the authors and do not necessarily reflect the views of any affiliated institutions.

Endnotes

1. *Kitab al-Zahra*, or *The Book of Flowers*, is a type of poetry anthology. Muhammad ibn Dawud compiled the selected poems in prose form.

2. This work, together with *Mushkat al-Musahib*, was published in Russian in Saint Petersburg in 1898–1899.

3. Individuals participating in discussions at madrasas, at the level of the instructors' assistants, were given a specific title. In some madrasas, it was also used for those supervising a specific class without having the full authority to teach. A *Muid* acted as an intermediary between the instructor and the student. This role is roughly equivalent to a modern-day "assistant."

4. Generally used starting in the 15th–16th centuries, this term referred to teachers ranked one level above a *Muid* and one level below a *Mudarris*, equivalent today to an "associate professor." *Mufids* analyzed and explained lessons at madrasas that the instructor had taught but that students had not fully mastered.

5. *Mudarris* or *Dersiam* referred to a teacher with the full right to give lessons at a madrasa. *Mudarris* were fully knowledgeable scholars, holding the highest academic rank within the education system.

6. *Softa* was a term used among the public for madrasa students. According to madrasa teachers, children passionately pursuing knowledge were mockingly referred to as "suxtə" by the people, which later evolved into *softa*.

7. *Danishmand* is an adjective for individuals who have completed madrasa education. Derived from Persian, the term spread rapidly after the Ilkhanid period. Students called *danishmand* were considered "knowledgeable" or "scholars."

8. A student who completed madrasa education and received *ijazah* (diploma) was given a specific title.

9. For information on the religious composition of the people living in Azerbaijan during the Seljuk period, see: Nəcəf, *Aran Atabəyləri*, pp. 287–294.

10. This work is very important as the first book covering all fields of logic taught in madrasas. Due to its original approaches to topics and events, it attracted attention in Europe and was even translated into Latin at an early date.

11. For extensive information on lessons and textbooks, see: İzgi, C. (1997). *Osmanlı Medreselerinde İlim II*. Istanbul: İz Yayınları.

12. During this period, children being abandoned in the streets of Tabriz is confirmed by Rashid al-Din: "*afil ki, bərāh mi-azdāzəd, işān rā bərgirənd.*" See: Raşideddin Fadlullah-i Hemedani, *Tarikh-i-Mubarak-i-Ghazani* (transl. & ed. K. Jahn, London, 1940), p. 213.

13. *Inju*—during the Ilkhanid period, a special property (land, estate, etc.) allocated to the ruler and the ruler's family. See: Özgedenli, O. G., *İncu*, in *DİA* (Diyanet İşleri Bakanlığı İslam Ansiklopedisi), Vol. XXII, p. 281.

14. For more on this work, see: Browne, E. G., *A Descriptive Catalogue of the Oriental Manuscripts Belonging to the Late E.G. Browne* (ed. R. A. Nicholson, Cambridge, 1932), pp. 231–236.

15. According to Özgedenli, a child leaving an orphanage had to master a trade. See: *Two Orphanages in Tabriz*, p. 178.

16. Unfortunately, only *ijazah* (diploma) documents from the late Ottoman period are available. One such document is preserved at the Manisa Provincial Library, Republic of Turkey, No: 1004-8b.

References

1. Alasgarova, G., & Peken, N. (2024). Girls' education and success in Azerbaijan: comparative document analysis. *Central Asian Survey*, 44(1), 42–63. https://doi.org/10.1080/02634937.2024.2393786
2. Aliyeva, N. (2010). *Al-Samani's "Kitab al-Ansab" as a source for the history of Azerbaijani culture*. Baku, Azerbaijan: Sharq-Qarb.
3. Aliyeva, N. (2010). *Al-Samani's "Kitab al-Ansab" as a source for the history of Azerbaijani culture*. Baku: Sharq-Qerb Publishing.
4. Aliyeva, N. (2014). *Ibn Makula and Azerbaijani intellectuals*. Baku: Institute of History, ANAS.

5. Aliyeva, N. (2015). *Scientific relations and teaching activities of Azerbaijani scholars in the medieval period*. Baku: Institute of History named after A.A. Bakikhanov, ANAS.
6. Al-Zahabi. (1984). *Siyar al-'Alam al-Nubala* (Shuayb al-Arnauti, Ed.). Beirut, Lebanon.
7. Amar, Z. (1998). The revolution in textiles in Eretz Israel and Syria in the Middle Ages. *Cathedra*, 87.
8. Anameriç, H., & Rukancı, F. (2008). Education in madrasas and universities between the 11th and 16th centuries. *Journal of Historical Studies*, 23(2).
9. Asgarova, V., Ilyasov, A., & Ashraf, M. A. (2024). Refocusing education: understanding higher education institutions' needs for human resource development in Azerbaijan. *Central Asian Survey*, 1–23. https://doi.org/10.1080/02634937.2024.2399287
10. Ay Resul. (1998). *Dervishes, students, and pilgrims in Anatolia in the 13th–14th centuries: Cultural circulation* (Master's thesis, Hacettepe University, Institute of Social Sciences). Ankara, Turkey.
11. Bilge, M. (1984). *Early Ottoman madrasas*. Istanbul: Istanbul University Faculty of Letters Publications.
12. Brockelmann, C. (1937–1942). *Geschichte der arabischen Literatur* (GAL) [History of Arabic literature] (Supplement, Vol. I). Leiden: E.J. Brill.
13. Browne, E. G. (1932). *A descriptive catalogue of the Oriental manuscripts belonging to the late E.G. Browne* (Ed. R. A. Nicholson). Cambridge: Cambridge University Press.
14. Çelebi, A. (2013). *History of education in Islam* (A. Yıldırım, Trans.). Istanbul: Damla Publishing.
15. Dağ, M., & Öymen, H. R. (1974). *History of Islamic education (H.1–VI/M.VII–XIII centuries)*. Ankara, Turkey: Ministry of National Education.
16. Derman, M. U. (1967). Our old ink. *Islamic Thought*, 2.
17. Derman, M. U. (2001). Pen. In *Diyanet Islam Encyclopedia* (Vol. 24).
18. Derman, M. U. (2006). Ink. In *Diyanet Islam Encyclopedia*.
19. Derman, M. U. (n.d.). Ink. In *Turkish Encyclopedia* (Vol. XX).
20. En-Nedim, M. ibn İ. (2017). *al-Fihrist* (M. Yolcu, S. Türkmen, M. S. Arı, S. Polatoğlu, & F. H. Yolcu, Trans.). Ankara: Cıra Publishing.
21. Ergun, A., Kondakci, Y., Zayim-Kurtay, M., & Valiyev, A. (2025). International higher education as a soft power tool of Turkish foreign policy: the case of Azerbaijan. *Third World Quarterly*, 46(3), 372–390. https://doi.org/10.1080/01436597.2025.2470366
22. er-Razi, İ. A. X. (1968). *Kitab al-jarh wa al-tadil* (Vol. I). Beirut, Lebanon.
23. Erünsal, İ. E. (2003). Library. In *Diyanet Islam Encyclopedia* (Vol. 27).
24. Eshenkulova, K. (2001). *Madrasah education and Ulum al-Awa'il during the Timurid period (Mathematics, Astronomy, and Medicine)* (Master's thesis). Istanbul University, Graduate School of Social Sciences, Istanbul.
25. Fayda, M. (2010). Tabari. In *Diyanet Islam Encyclopedia* (Vol. 39).
26. Gil, M. (1983). *Palestine during the first Muslim period* (Vols. II–III). Tel Aviv.
27. Hemedani. (1957). *Maqamat* (R. Blachere, Trans.). Paris, France.
28. Hinz, W. (1955). *Islamic weights and measures*. Leiden: E.J. Brill.
29. Ibn Hawqal. (2014). *Islamic geography in the 10th century (Surat al-Arz)* (R. Şeşen, Trans.). Istanbul: Yeditepe Publishing.
30. Ibn Khallikan, A. ibn M. (1948–1949). *Wafayat al-ayan wa anba' al-zaman* (M. M. Abdulhamid, Ed.; Vol. VI). Cairo: Al-Saade Press.
31. Isaeva, R., Ratinen, I., & Uusiautti, S. (2023). Understanding student success in higher education in Azerbaijan: the role of student engagement. *Studies in Higher Education*, 48(12), 1918–1936. https://doi.org/10.1080/03075079.2023.2217208
32. İzgi, C. (1997). *Knowledge in Ottoman madrasas II*. Istanbul: İz Publishing.
33. Kaymaz, N. (1970). *Pervane Muinuddin Suleyman*. Ankara: Ankara University Faculty of Language, History and Geography Publications.
34. Kazimi, P. (2008). *Library work in Azerbaijan during the Safavid period*. Baku: Baku University Press.
35. Keleş, M. R. (2016). The tradition of inaugural lectures in medieval Islamic madrasas: The example of Kayseri Pervane Bey Madrasa. *Humanitas*, 4(8).
36. Keykavus. (2003). *Kabusname* (S. Ç. Ekinci, Ed.). Istanbul.
37. Kifti, C. A. A.-H. A. ibn al-Kadi al-Ashraf Yusuf. (1903). *Akhbar al-'ulama bi akhbar al-hukama*. Leipzig.
38. Köprülü, F. (1942). Some notes on the Maragha observatory in the 13th century. *TTK Belleten*, 6(23–24).
39. Levery, M. (1962). *Mediaeval Arabic bookmaking and its relation to early chemistry and pharmacology*. Philadelphia: University of Pennsylvania Press.
40. Makdisi, G. (2007). *Humanities in the classical Islamic world and Christian West* (H. T. Başoğlu, Trans.). Istanbul: Klasik Publishing.

41. Makdisi, G. (2009). *Human sciences in the classical Islamic era and Christian West* (H. T. Beşoğlu, Trans.). Istanbul, Turkey: Klasik Yayınları.
42. Mazaheri, A. (1972). *Life of Muslims in the Middle Ages* (B. Üçok, Trans.). Istanbul: Varlık Publishing.
43. Mehmed, S. (2014). *Islamic law in the Great Seljuk period* (Master's thesis). Uludağ University, Graduate School of Social Sciences, Bursa.
44. Moreno, V. G., & Patrinos, H. A. (2019). Returns to Education in Azerbaijan: Some New Estimates. *Problems of Economic Transition*, 61(6), 411–425. https://doi.org/10.1080/10611991.2019.1823700
45. Mozaffari, A., & Akbar, A. (2022). Iran's soft power in Azerbaijan: shifting cultural dynamics in the post-Soviet era. *International Journal of Cultural Policy*, 29(6), 667–685. https://doi.org/10.1080/10286632.2022.2135706
46. Muhammad ibn Sa`d. (1909). *Kitab al-Tabaqat al-Kabir* (K. V. Zettersteen, Ed.; Vol. VI). Leiden, Netherlands.
47. Najaf, N. A. (2010). *History of the Seljuk states and atabegs*. Baku: Qanun Publishing.
48. Najaf, N. A. (2017). *Aran atabegs*. Baku: Başla Publishing.
49. Needham, J. (1985). *Science and civilization in China*. Cambridge, England: Cambridge University Press.
50. Nesirov, E. (2011). *Medieval Azerbaijani scholars: Jurists, commentators, muhaddiths, theologians, narrators, and qaris*. Baku, Azerbaijan: Nurlar.
51. Nizam al-Mulk. (1999). *Siyasetname* (M. A. Köymen, Ed.). Ankara: TTK Publishing.
52. Özgüdenli, O. G. (2003). A model of an Ilkhanid city: Professions, officials, and salaries in Rab-i Rashidi. In *Seminar on guilds and economy before the Ottoman period, Ottoman period, and the Republican period* (May 9–10, 2002, Istanbul), Vol. I. Istanbul.
53. Özgüdenli, O. G. (2003). Two orphanages in Tabriz at the beginning of the 14th century. In E. Gürsoy Naskali & A. Koş (Eds.), *War children, orphans, and abandoned children* (pp. [insert pages]). Istanbul: Kitabevi Publishing.
54. Özgüdenli, O. G. (2004). Meraga. In *Diyanet Islam Encyclopedia* (Vol. 29).
55. Özgüdenli, O. G. (2006). A model of an Ilkhanid city: Professions, officials, and salaries in Rabʿ-i Rashidi. In *Turco-Iranica: Medieval Turkish-Iranian historical studies*. Istanbul: Kaknüs Publishing.
56. Özgüdenli, O. G. (2006). Books found in the tomb of Sheikh Safi al-Din Ardabili. In *Turco-Iranica: Medieval Turkish-Iranian historical studies*. Istanbul: Kaknüs Publishing.
57. Özgüdenli, O. G. (n.d.). İncu. In *Diyanet Islam Encyclopedia* (Vol. XXII).
58. Rašiduddīn, F. H. (1940). *Tarikh-i-mubarak-i-Ghazani* [Geschichte Gazan-Hans aus dem Taʿtih-i Mubarek-i Gazani] (K. Jahn, Trans. & Ed.). London.
59. Richard, F. (1982/1361 SH). Mohr-i kitabkhane-yi Rashiduddin Fazlullah-i Hemedani? *Ayande*, 8(6).
60. Star, F. S. (2017). *Lost enlightenment: Central Asia's golden age from the Arab conquest to Timur*. Baku, Azerbaijan: Caucasus Publishing House.
61. Subki. (1323–1324 AH). *Tabakat al-safiyya al-kubra* (Vol. III). Cairo.
62. Touati, H. (2016). *Islam and travel in the Middle Ages: History and anthropology of a scholar's pursuit* (A. Berktay, Trans.). Istanbul, Turkey: Yapı Kredi Publishing.
63. Vaqqifname-yi Rabi-Rashidi. (1350 SH). Edited by M. Ninovi & I. Afshar. Tehran.
64. Witkam, J. J. (n.d.). Midad. In *Encyclopaedia of Islam, Second Edition* (Vol. VI).
65. Zakariya Qazvini. (1370 AH). *Asar al-bilad. Beirut.*

RESEARCH ARTICLE

Behavioral Motives and Media Preferences of College Students: An Empirical Study on Social Media Hashtag Functionality

Author Information

Shaohua Wei	Dr. School of Media and Arts, Shanghai University of Sport, Shanghai 200438, China Email: weishaohua@sus.edu.cn
Yu Zhang	Dr. School of Media and Law, Shanghai Industry & Commerce Foreign Language College Shanghai, 201399, China E-mail: susrainy420@163.com
Shan Chen	Corresponding, Dr. School of International Education, Shanghai University of Sport Shanghai, 200438, China chenshan@sus.edu.cn

Issue web link	https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html
Keywords	College students; Social media; Hashtags; Behavioral motives; Media preference

Abstract

Background and Actuality:

Social media has become an integral part of college students' daily lives, not only serving as a tool for entertainment and communication but also shaping information-seeking behaviors, identity construction, and media preferences. Within this context, the hashtag function has emerged as a crucial mechanism for organizing digital content, enhancing engagement, and amplifying online discourse. Despite its widespread use, limited research has addressed the psychological motives driving college students' adoption of hashtags and their resulting media preferences.

Methods and Data:

This study employed a mixed-methods design combining quantitative surveys (n = 512 college students in Shanghai) with AI-assisted interaction analysis of hashtag use across WeChat, Weibo, and QQ. The survey measured behavioral motivations including information-seeking, social interaction, entertainment, and self-expression, while the AI model examined frequency, context, and engagement patterns of hashtag adoption.

Results:

Findings indicate that WeChat, Weibo, and QQ remain the dominant social platforms among college students. Hashtags are widely perceived as effective for information retrieval, community building, and communication tasks. Behavioral motives strongly predicted platform choice and hashtag use: students driven by information-seeking and social interaction engaged more consistently with hashtags, while entertainment-driven use was more platform-specific.

Conclusions:

The results highlight the centrality of hashtags in shaping media bias and preference formation among youth. By linking psychological motives to functional use of hashtags, the study expands understanding of social media psychology and offers implications for educators, policymakers, and digital platform designers seeking to foster meaningful and responsible online engagement.

Citation. Wei Sh., Zhang Y., Chen Sh. (2025). Behavioral Motives and Media Preferences of College Students: An Empirical Study on Social Media Hashtag Functionality Author Information. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 34–53. https://doi.org/10.56352/sei/8.11.3

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.05.2025	Accepted: 14.08.2025	Published: 03.09.2025 (available online)

1. Introduction

With the continuous popularization of the Internet, the number of Internet users in China has also increased. According to the statistical report released in 2020, as of March 2020, the number of Internet users in China has reached 904 million, an increase of 75.08 million compared with that in 2018. Among them, the number of mobile Internet users reached 897 million, accounting for 99.3%. Especially during the outbreak, the opening of schools nationwide is delayed, and teaching activities are adjusted from offline to online, which also push the rapid growth of online education users. Moreover, Chinese government agencies have opened media platform accounts to enhance interaction with the public with the help of new media. According to relevant data, during the outbreak, the number of government's new Tiktok accountsis 17380, the number of new Toutiao accounts is 82937, and number of new microblog accounts is 139000[1].

Social media is a form of mass media. With the continuous development of society, social media has gradually penetrated into people's media life, which allows users to create and communicate. At present, people often use microblog, blog, community website, QQ, Wechat, etc., which are typical social media. People can realize the expression and exchange of views with the outside world, as well as the acquisition and dissemination of information by using them, which makes Internet users feel free and convenient, so it also attracts a large number of college students' netizens[2]. Social media can be divided into narrow sense and broad sense. In a broad sense, social media refers to channels that can promote communication and form interpersonal relationships, while in a narrow sense, it is a media platform developed based on Web 2.0. The "Hashtag" function is mainly used to initiate and discuss the main body of the line management. Especially in recent years, "Hashtag" function has become an important way of college students' social dialogue[3].

Therefore, considering the special significance of the "Hashtag" function of social media and college students as an important group of Internet users, it is of great significance to study their use of "Hashtag" and media bias in social media, so as to further obtain college students' preference for "Hashtag" and social media.

2. Literature Review

Social media is becoming more and more important in people's life. Whether it is communication or sharing, it has become an important part of people's daily activities. Swart et al. (2018) pointed out that social media plays the role of communication in the daily environment, and people's understanding of the frequency, content preference and network settings of some information on the communication media is more based on social experience, and there is a certain gap between whether news topics can promote dialogue. They investigated how people participate collectively in current events and related follow-up, sharing and discussion practices in different social forms. The results show that members of social groups have weak ties and tend to news centers. In addition, privacy needs to be considered, and norms and social boundaries should be clarified[4].Zappavigna and Martin (2017) pointed out that social metadata is an important dimension of social media communication, which is closely related to the practice of planning, topic and search content. In social media, participants do not necessarily have direct contact, and they can make alliances and negotiations through social topics[5].

Hilpert and Marchand (2018) pointed out that the philosophical and theoretical sources of complex system research organized by complex, dynamic and emerging ontological features are useful and appropriate for psychology[6]. McCrudden and Marchand (2020) discussed and analyzed the application of M3, and analyzed the five purposes of mixed method research, and illustrated how M3 was used for mixed method research. Through the description of three key assumptions and examples, it shows how to shape a person, and shares some experiences and lessons[7].

Zawacki-Richter et al. (2019) pointed out that the application of artificial intelligence in the field of education is one of the emerging fields of current education technology, and artificial intelligence in education can be applied in the field of education services, but there are also certain risks. At the same time, due to the weak connection between artificial intelligence education and theoretical education perspective, it is necessary to further explore the ethics and educational methods of the application of artificial intelligence education in higher education[8].Edwards et al. (2019) used the social actor paradigm to expand the prediction of social identity theory to human-computer interaction in teaching and communication, and pointed out that older students give higher evaluation on the reliability and social existence of older artificial intelligence speech instructors, and reported that they have more learning motivation than students with lower age identity, and discussed the design features of computerized sound[9].

To sum up, in previous studies, the use of "Hashtag" function of social media is mostly focused on social media communication, while the research on college students' psychology is relatively single. Therefore, when the use of "Hashtag" function of social media is considered, college students' psychological behavior motivation and artificial intelligence technology are added to study the use of social media by college students.

3. Methods

3.1Hashtag function in social media

Hashtag system can be classified into two categories in terms of functions: social function and media function. Certainly, there is no clear-cut boundary between these two functions[10-12]. The hashtag function of social media is reflected in the topic interaction functions, such as Share, Follow, Forward, Like, Reward, and Up. Users can interact about specific topics via hashtags. Meanwhile, the introduction of the "#" sign provide a strong function to aggregate same-topic posts. The hashtag function enables social media users to act actively. In other words, users are not only passive readers but also contributors in social media. Recently, the hashtag function has drawn increasing attention and has been widely use in practice[13].

The study consists of three phases. In the first phase (from 2013 to 2014), we surveyed and interviewed selected sample of college students about their use of social media. We find that the use of social media technologies results in various social problems. For example, some college students exhibit two drastically different personalities in the real life and in social media, indicating a social anxiety disorder phenomenon[14-16]. In the second phase (from 2015 to 2016), we distributed an online survey again to college students and further investigated part of items in the first survey. Moreover, the use of different social media is examined separately. In the third phase (2017-2018), we further included the investigation of new applications in social media such as short videos and fundraising. The entire study spans for six years and enables us to study the changes of hashtag use and platform selection preferences[17-20].

Respondents are mainly from Henan and Shanghai. Questionnairewere distributed in WeChat Moment with the snowballing approach and filled voluntarily. Each questionnaire collecting period lasted for one month. Invalid data are removed. The final sample consists of 1,342 responses[21.22]. The region distribution is shown in Figure 1.

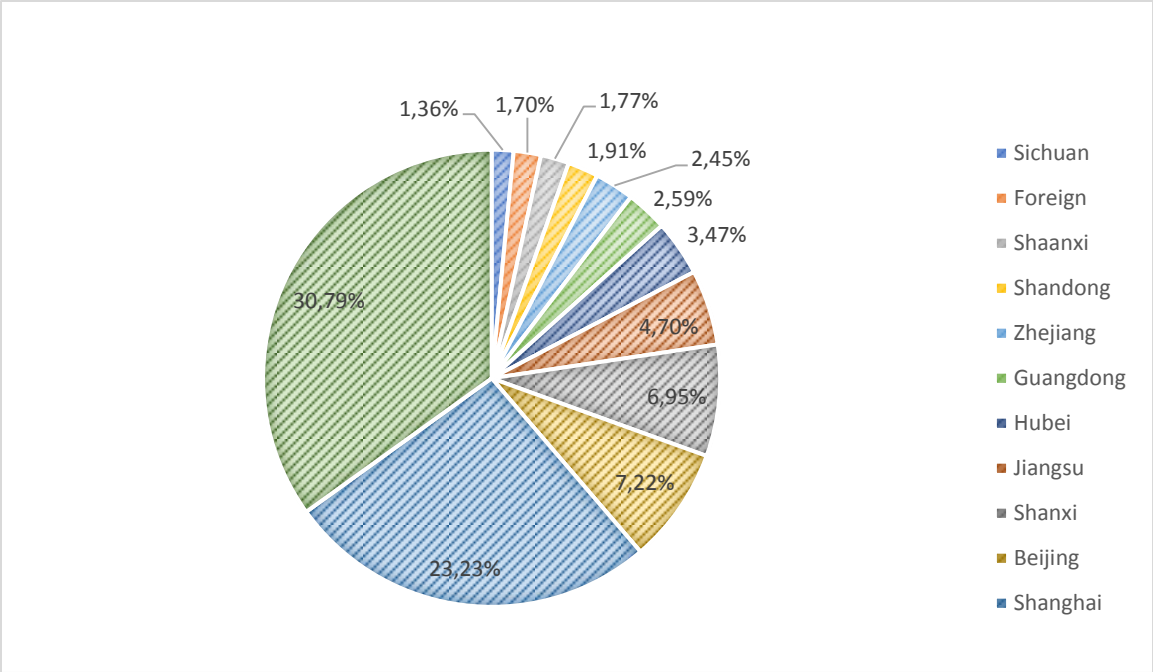


Figure 1: Region distribution of the sample

3.2Major social media and the characteristics of the hashtag function

Based on the function characteristics, hashtag systems can be classified into opensystem, semi-open system, and closed system. The corresponding social media and keyfunction of each system are summarized in Table 1[23-25].

Table 1: Major social media and the characteristics of the hashtag function

Hashtag system category			Major social media platforms in China	Major social media platforms in other countries	Major functions
Openness	Category				
Semi-open system	Forums		Tianya BBS, Mop BBS, BaibaTieba	Yahoo(Message Boards)	Posting and Community
	Vertical community	Category based on Interests	Reading, movies: Douban, LOFTER Pictures: Duitang, Babidou, Bababian, Lofter Videos: Youku, Tudou, Ku6	Instagram pinterest Youtube	Professional comments on a certain field. Information search and sharing
		Categories based on users	Gagamatch, Badoo International socialization: Tingdong, Gagamatch, WeLiveInChina, Badoo Workplace	Linkedin	Language and culture communication

			socialization: 52rbl, Ushi, LinkedIn		
	Collaborative publication	Q&A	Zhuhu, Tianya Wenda, Baidu Knows, Fenda, Zaihang	Quora	Professional answers (mainly about science and technologies)
		Encyclopedia	Hudong, Baidu, Baike	Wiki	User edit, collaborative publication
Open system	We Media	Long-post we media	Qzone, Sina Blog, 163Blog, WeChat	Blogging	Personal log and articles
		Short-post we media	Fanfou, SIna Weibo, Tecent Weibo, Sohu Weibo, Qzone	Twitter, Digg	Personal information posting and information sharing
Closed system	Instant message		QQ, AliTrademanager, WeChat, Easychat, MiTalk, Momo, YY	WhatsApp、MSN、Skype	Online messaging, online chatting
	Social networking service		Renren, Kaixin001, Pengyou, Facebowl	Facebook	Social networking and sharing

College students are generally aware of the importance of social media, with 50.3% of students recognizing its importance, and 22.95% of students think that social media is very important. The time spent by college students on social media is statistically analyzed. Figure 2 shows the data result.

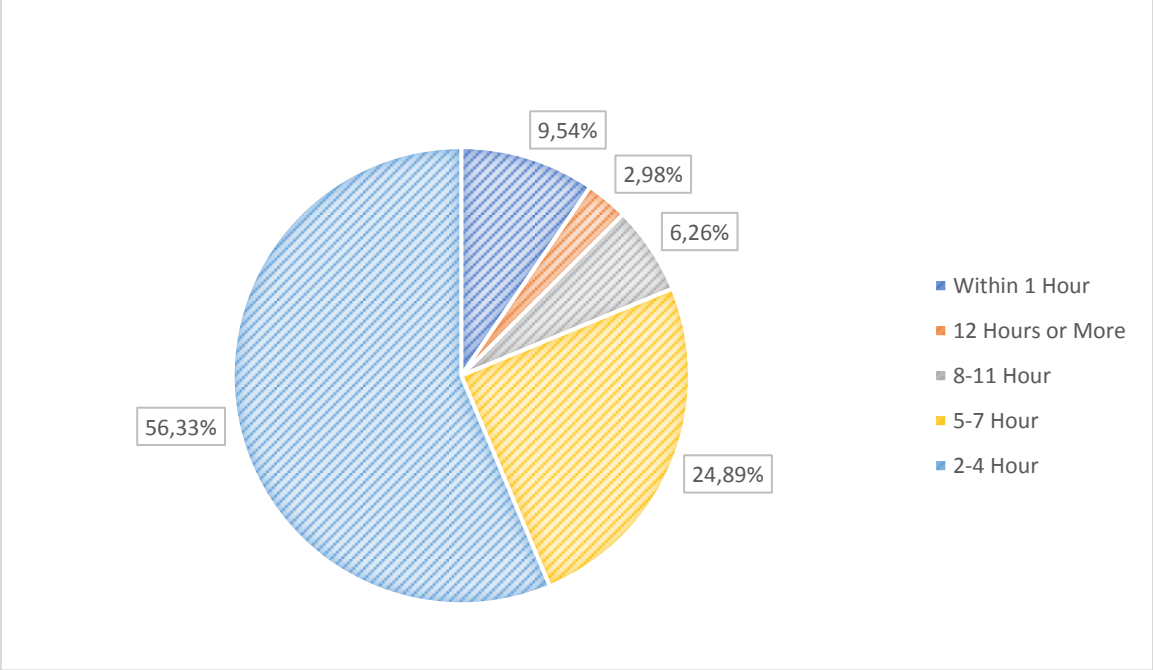


Figure 2: Time spent on social media

From the above survey results, it is found that50.3% of students select "important" and 22.95% of students select "very important". Over 90% of respondents spend more than two hours on social media every day. Specifically, 53.33% of respondents select "2-4 hours", followed by "5-7 hours" (24.89%), "8-11 hours" 6.25%, and "more than 12 hours" (2.98%). In addition, college students have a strong social media dependency and the use of social media account for a large portion of their leisure time. Nearly half of the students use social media after 10 pm.

3.3 Social media preferences

College students mainly use social media on mobile devices. For all social media applications, mobile devices account for more than 84%.According to the statistics of social platforms used by college students, the results of Figure 3 are obtained.

General Options	Subtotal	Percent
QQ	1266	94.34%
Wehchat	1269	94.56%
Weibo	1152	85.84%
Baidu Tieba	712	53.06%
Fetion	575	42.85%
Tianya BBS	153	11.4%
Zhihu	351	26.15%
YY	295	21.98%
Momo	160	11.92%
Twitter	101	7.53%
Douban	305	22.73%
Laiwang	31	2.31%
Renren	501	37.33%
Facebook	162	12.07%
Line	116	8.64%
Others	30	2.24%
Effective people	1342	

Figure 3 reports all social media platforms that have ever been used by sample students.

The above results show that WeChat, QQ, Weibo, Baidu Tieba are the most popular social media platforms used by college students: 94.34% of the students have used QQ, 94.56% of the students have used WeChat, and 85.84% of the students have used Weibo.After that, students are asked to select the three most commonly used social media platforms from the above contents, and then the results in Figure 4 are obtained.

General Options	Subtotal	Percent
QQ	1132	84.35%
Wehchat	1269	94.56%
Weibo	1038	77.35%
Baidu Tieba	128	9.54%
Fetion	27	2.01%
Tianya BBS	19	1.42%
Zhihu	72	5.37%
YY	26	1.94%
Momo	8	0.6%
Twitter	4	0.3%
Douban	26	1.94%
Laiwang	1	0.07%
Renren	13	0.97%
Facebook	16	1.19%
Line	2	0.15%
Others	10	0.75%
Effective people	1342	

Figure 4: Use frequency of social media platforms

Figures 3 and 4 show that in the first stage of the survey, Fetion and Renren are more popular among college students. This is because from 2009 to 2013, Fetion and Renren developed better, bringing more information and creating certain convenience for college students.42.85% of student have used Fetion and 37.33% of students have used Renren.After that, with the continuous development of Wechat, the number of users of Fetion and Renren decreases gradually. By 2017, only 0.97% of the students often used Renren, but the number of people using Wechat reached 98.42%. The proportion of using QQ reached 87.31%, and the proportion of using microblog reached 84.45%.At present, Fetion, Renren and other social media platforms have almost disappeared, and their users have gradually migrated to Wechat and microblog. This is because users cannot manage multiple social media platforms at the same time, and the relevant data cannot be transferred to another platform.Therefore, the emergence of new competitors may cause users to migrate and other huge changes.

4. Results and Discussion

4.1 Multiple purposes of social media use: social and information needs

The problem of college students' preference to use social media is analyzed. It is found that college students have more preferences and different purposes of using social media,as shown in Figure 5.

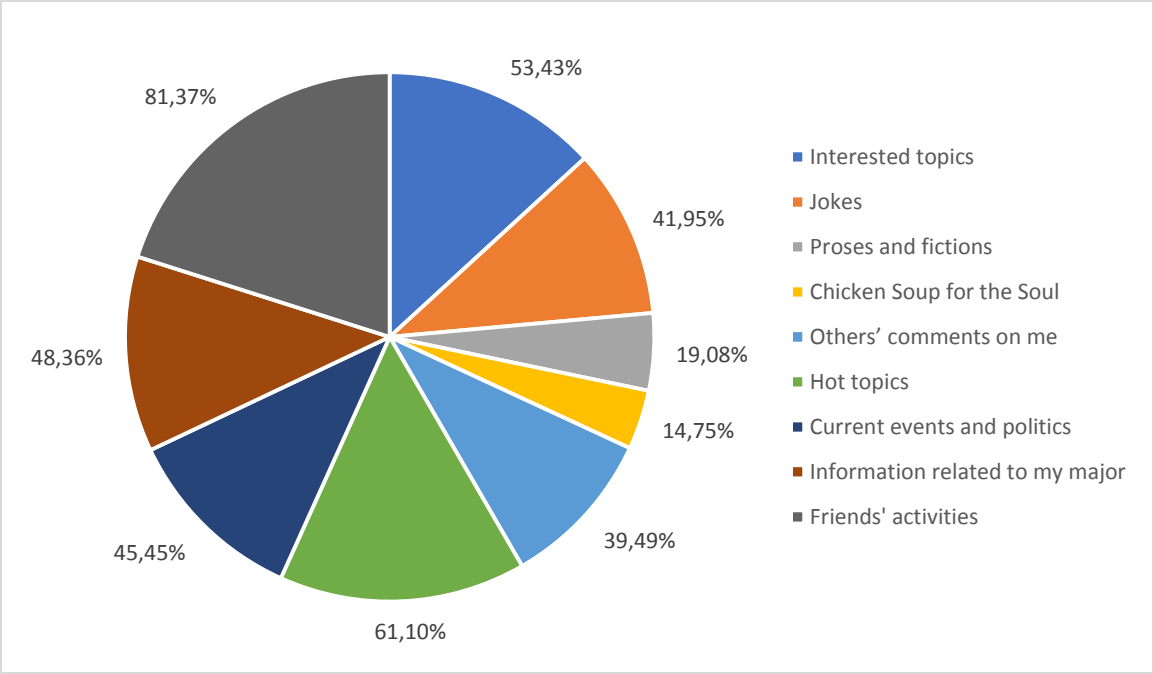


Figure 5: College students' purpose of social media use

Figure 5 shows that the purposes of college students' social media use are multiple. However, two main purposes are checking others' posts and hot topics. 81.37% of sample students select "others' posts" and 61.1% of students select "hot topics". Respondents who read "chicken soup for the soul" articles that are most widespread in social media only account for 14.75%. 53.43% of college students use social media to read contents they are interested in. Further interviews suggest that the categories of contents student are most interested in include comics and animations, videos games, and recruitment information.

4.2Key determinant of forwarding posts: insightful

The problem of college students' preference for using social media is analyzed. It is found that college students have more preferences and different purposes of using social media,as shown in Figure 6:

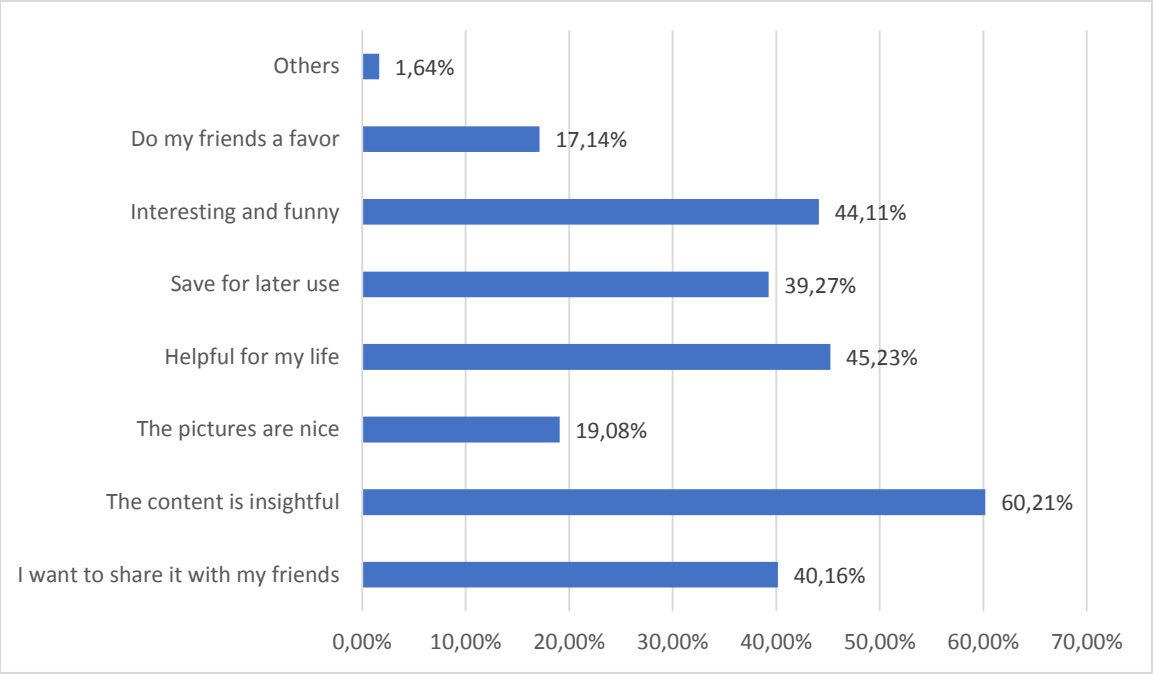


Figure 6: Determinant of forwarding for college students.

Figure 6 shows that the primary reason for college students to forward a post is: the content is insightful (60.21%). For college students, the quality of articles in social media is still the most important reason for students to forward contents and participate in a topic. The other two reasons for forwarding are "helpful for my life" (45.23%) and "interesting and funny" (44.11%). Therefore, whether the contents are of practical value and entertaining is also crucial determinants for forwarding and interactions.

4.3 The motives of function preference for social media platforms

When college students use social media, the use of "Hashtag" function is to deeply understand the content and discuss the important work. Especially in the use of microblog, "Hashtag" function is used more frequently. Figure 7 shows the reason for use.

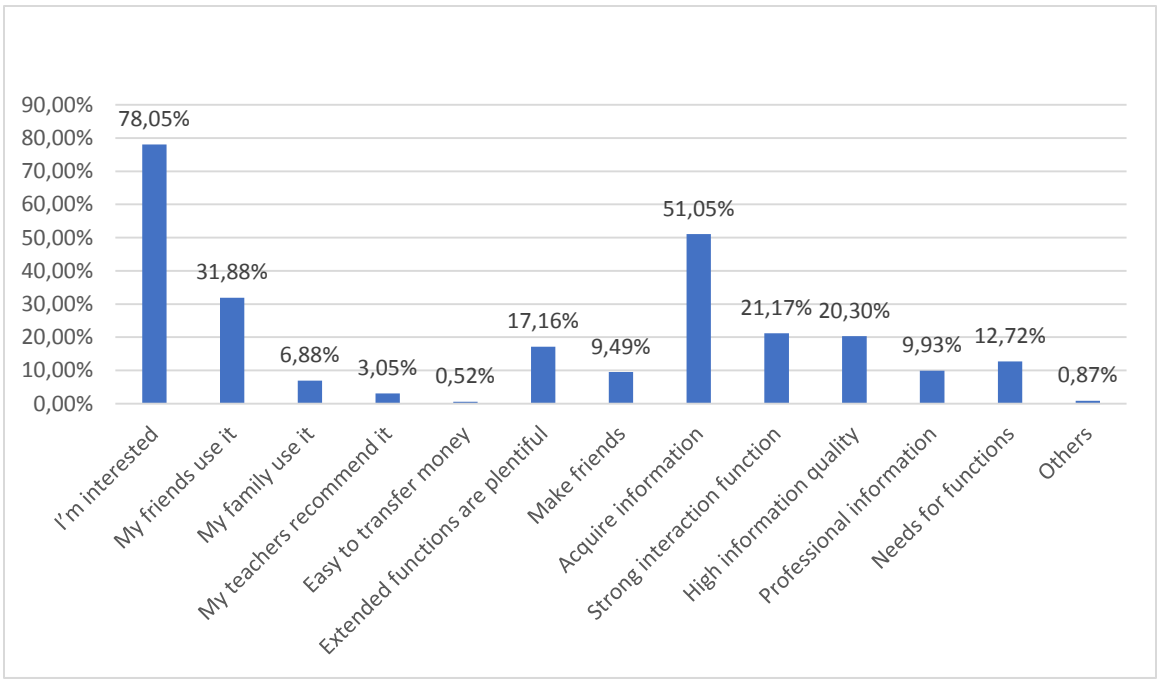


Figure 7: The reasons for college students to use Weibo

Figure 7 shows that the major reasons for college students to use Weibo include "I'm interested" (78.05%) and "acquire information" (51.05%). About 30% of respondents use Weibo because their friends use it (31.88%). The results in Figure 7 suggest that the social networking role of Weibo is more important than its informational role.

In addition, the use of "Hashtag" function by college students is also analyzed. Figure 8 shows the results.

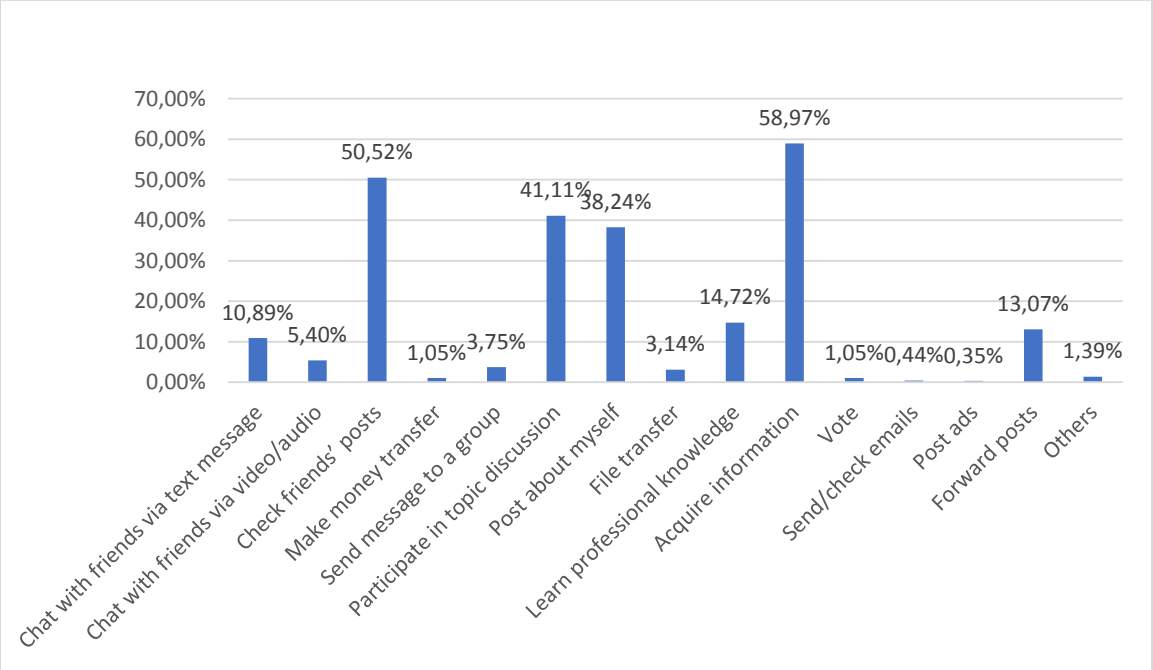


Figure 8: Most used functions for Weibo

Figure 8 shows that the most used hashtag function of Weibo is information acquisition—a media function, accounting for 58.97%, followed by checking friends' posts (50.52%) —a social networking function and participation in top discussion (41.11%)—a mixed function.

On this basis, news topics are analyzed, that is, when there is a sudden news, the social platform that it appears first is investigated.

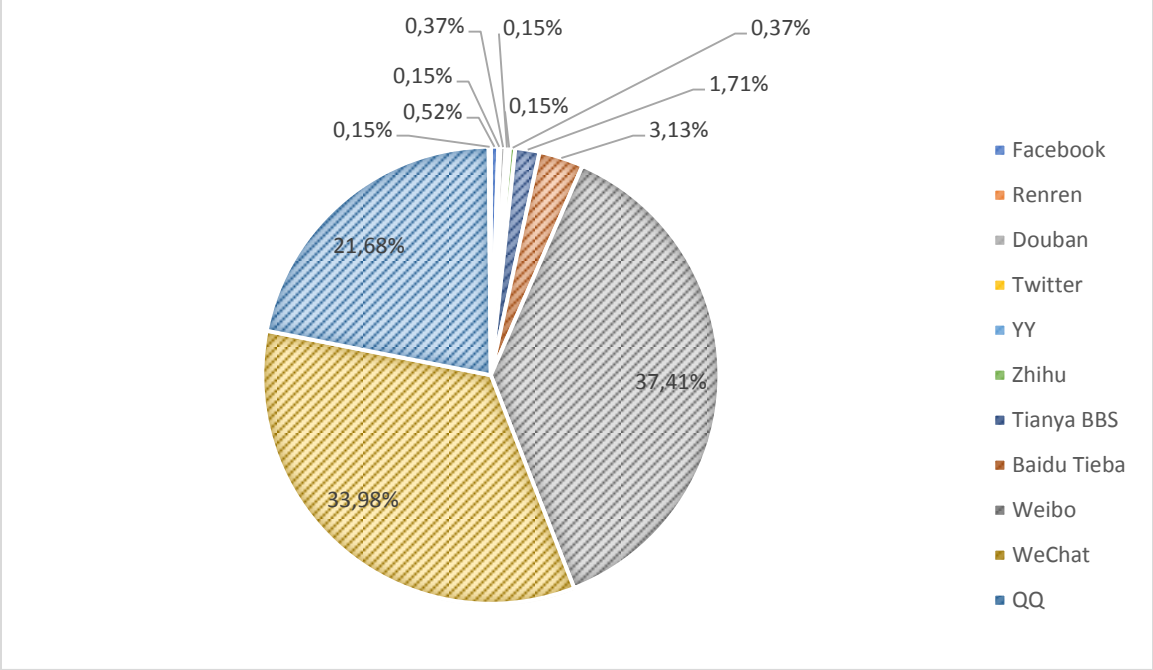


Figure 9: Distribution of preferred social media platform to reveal breaking news

Figure 9 shows that when there is a sudden news, 37.41% of them first publish on Weibo, 33.98% on Wechat and 21.68% on QQ.

4.4 Application of artificial intelligence in social media "Hashtag" tracking

When college students use social media, the human-computer interaction of artificial intelligence technology is applied to the "Hashtag" tracking of social media. When users input topic content into the human-computer interaction system, the system can match the input information with the background database, and then provide the topic content with high matching degree for users to watch and discuss [26-29].

More college students have a certain understanding of human-computer interaction. No matter what the scene, human-computer interaction can make students feel convenient through the screen, and it is also convenient for people's life. At the same time, on the basis of understanding the content of "Hashtag", college students can extend and expand to social skills through artificial technology, which will affect the interpersonal communication efficiency and content communication quality of college students, and also affect the bias of social media [30-32].

4.5Social media preferences

When the usage of QQ, Wechat and Baidu Tieba is analyzed,the reason and function distribution are analyzed. Figures 10 and 11 show the corresponding results.

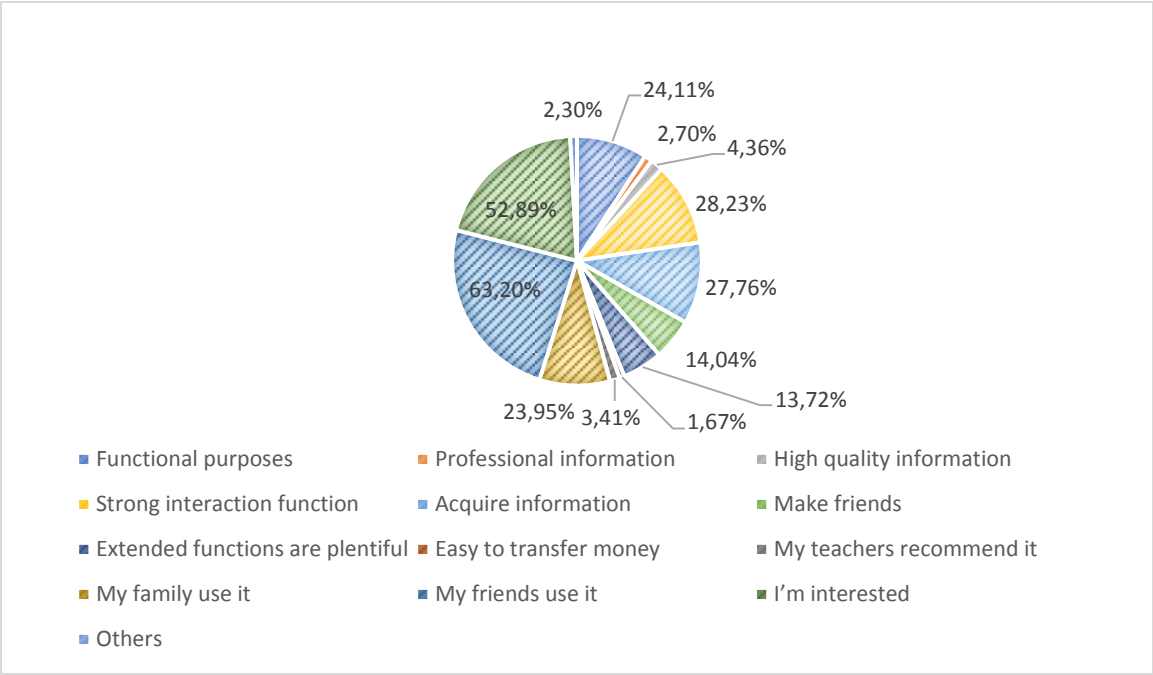


Figure 10: The distribution of the reasons to use QQ

Figure 10 shows that the reasons to use QQ reflects strong customer stickiness. The top reason is "my friends use it" (63.2%). "I'm interested" accounts for 52.89%. "my family use it" accounts for 23.95%. Only less than 30% of respondents use QQ because of information related reasons.At the same time, the function of QQ topic tag is analyzed. Figure 11 shows the usage distribution.

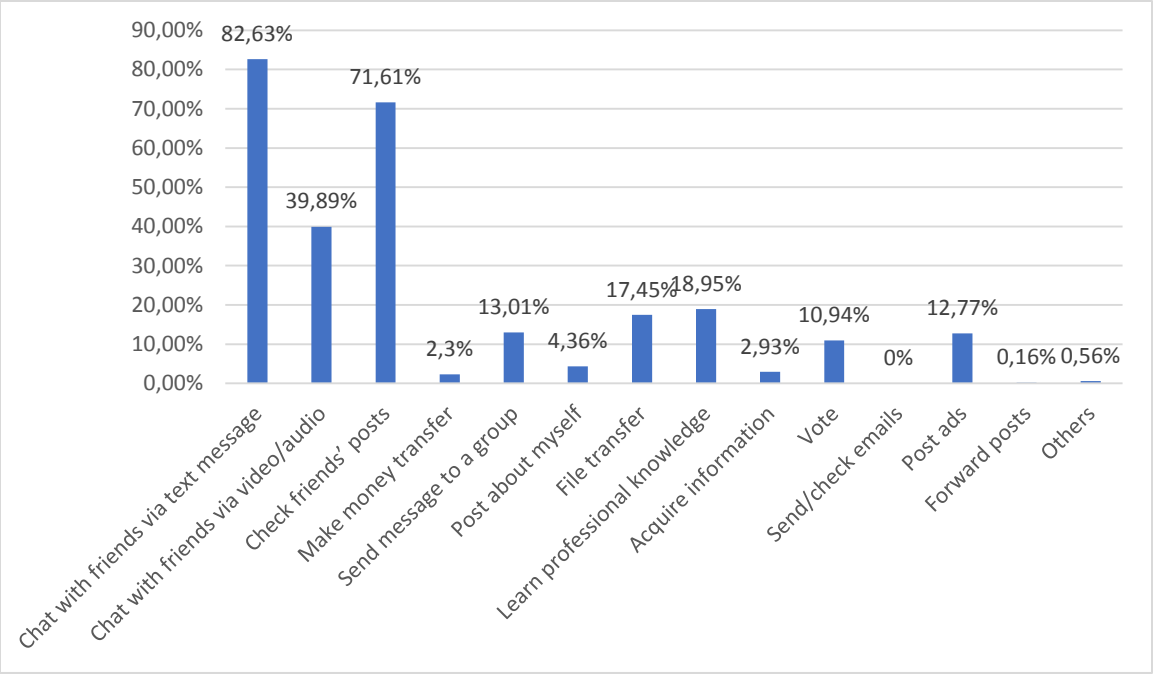


Figure 11: The distribution of QQ function use

Among the hashtag functions in QQ, text chatting is the most used (82.63%) function, followed by "check friends' posts" (71.61%). QQ video function accounts for 39.89%. Other frequently used functions include file transfer (18.95%) and "post a status" (17.45%). The social networking genes of Tencent has made QQ the most easy-to-use social networking tool. The 2017 survey results indicate that 73.21% of college students use QQ as their workplace social media tool. Recently, there is a growing trend toward the workplace use of QQ.

When the function distribution of Wechat is analyzed, it is found that the use of Wechat topic function mainly focuses on social network and financial transaction function, as shown in Figure 12.

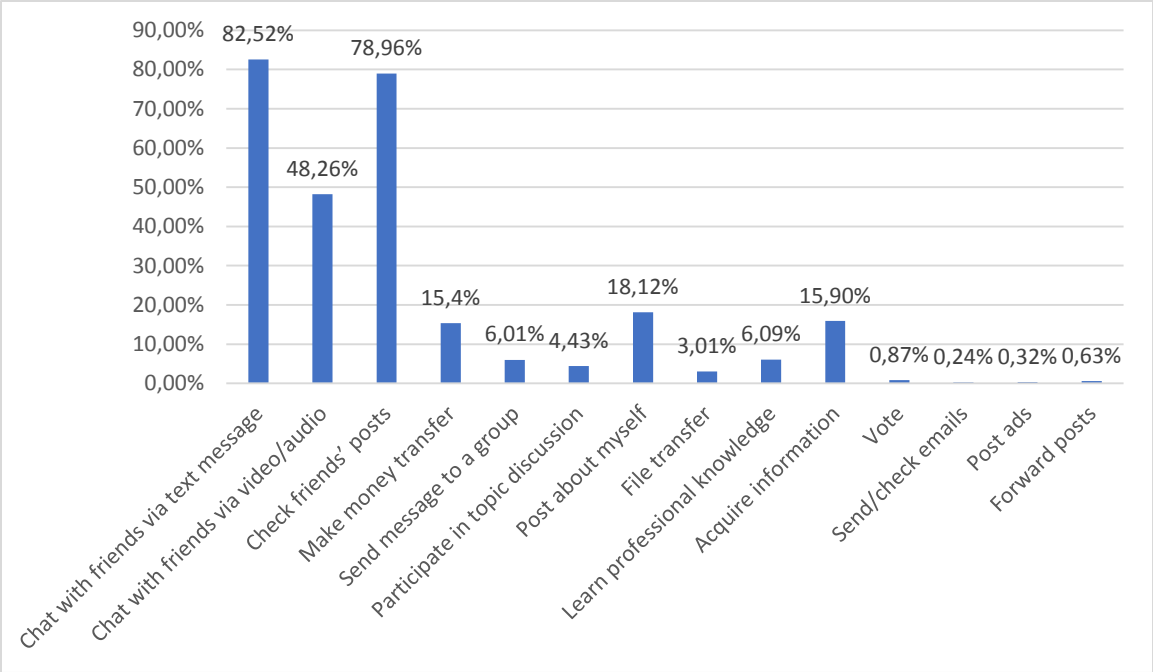


Figure 12: The distribution of WeChat function use

Figure 12 shows that the most used WeChat functions include "chat with friends" (82.52%), "check friends' posts" (78.96%), and "chat with friends via video" (48.26%). Other functions include "post a status" (18.12%), "acquire information" (15.9%), and moneytransfer (15.35%). The results suggest that the transfer function is recognized by users and the financial activities are increasingly active, entailing higher requirements of transaction security for platforms and regulation authorities.

There are many reasons for using Wechat, but it is similar to QQ. Figure 13 shows the cause distribution.

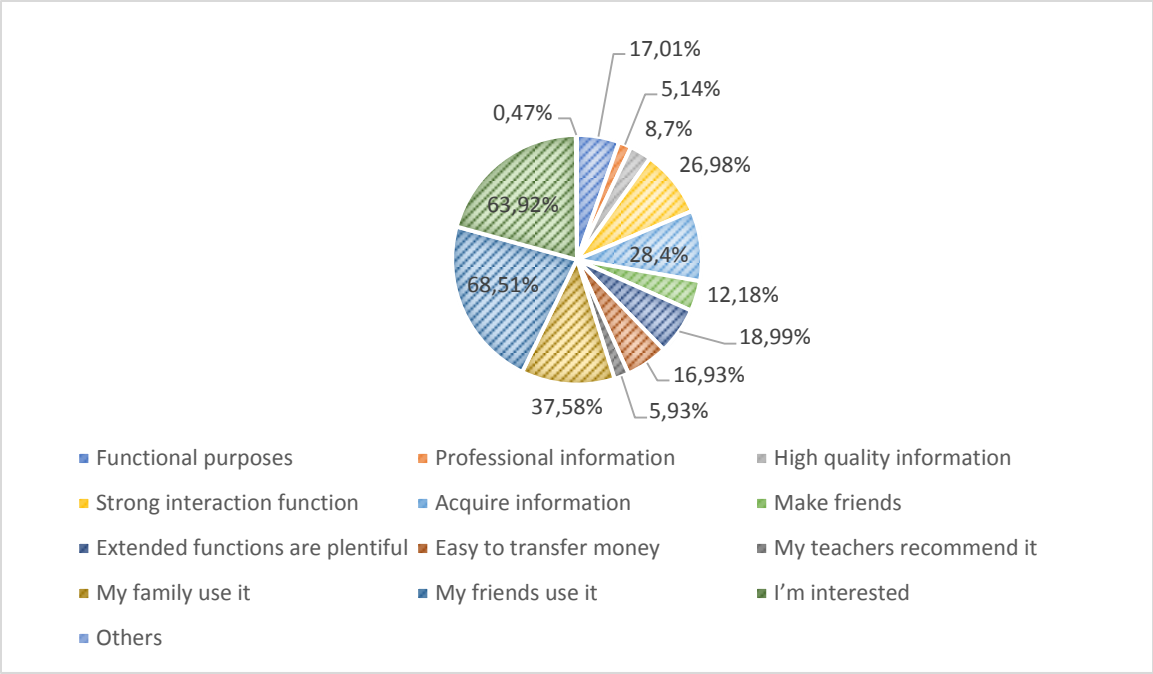


Figure 13: The distribution of the reasons to use WeChat

The reasons to use WeChat are similar to those for QQ and the social networking functions are dominant. Top 3 functions are "my friends use it" (68.51%), "I'm interested" (63.92%), and "my family use it" (37.58%). Users aiming at acquiring information only account for less than 30% (28.45%). However, nearly 30% of the respondents point out that the primary reason for them to use WeChat is its strong interactive function (26.98%).

The most used function of Baidu Tieba is acquiring information (58.59%) and participating in topic discussion (53.66%). Our investigation reveals that over 90% of respondents use Baidu Tiedu anonymously and consider the comments in Tieba emotional. Acquiring information and topic discussion are functions that are more frequently used than other.

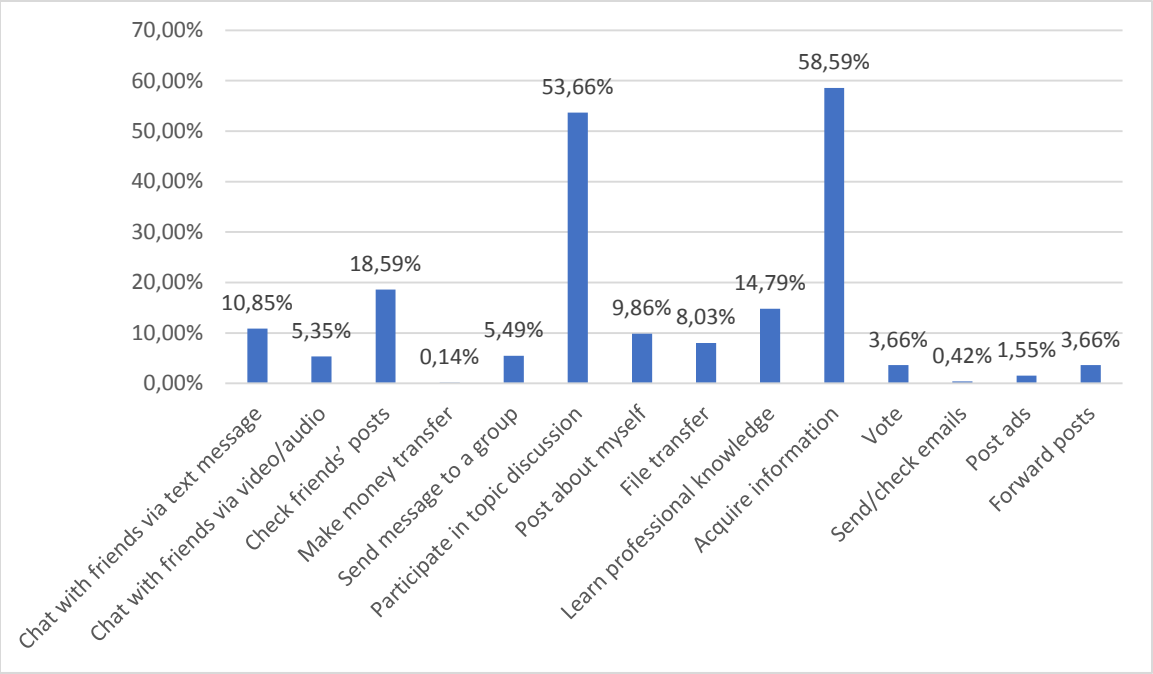


Figure 14: The distribution of WeChat function use

The major reason for college students to use Tieba is information distribution. Among the reasons to use Tieba, personal interests and information acquisition account for 60.7% and 41.69%, respectively. About one quarter of the students explicitly mention that they use Tieba to acquire information.

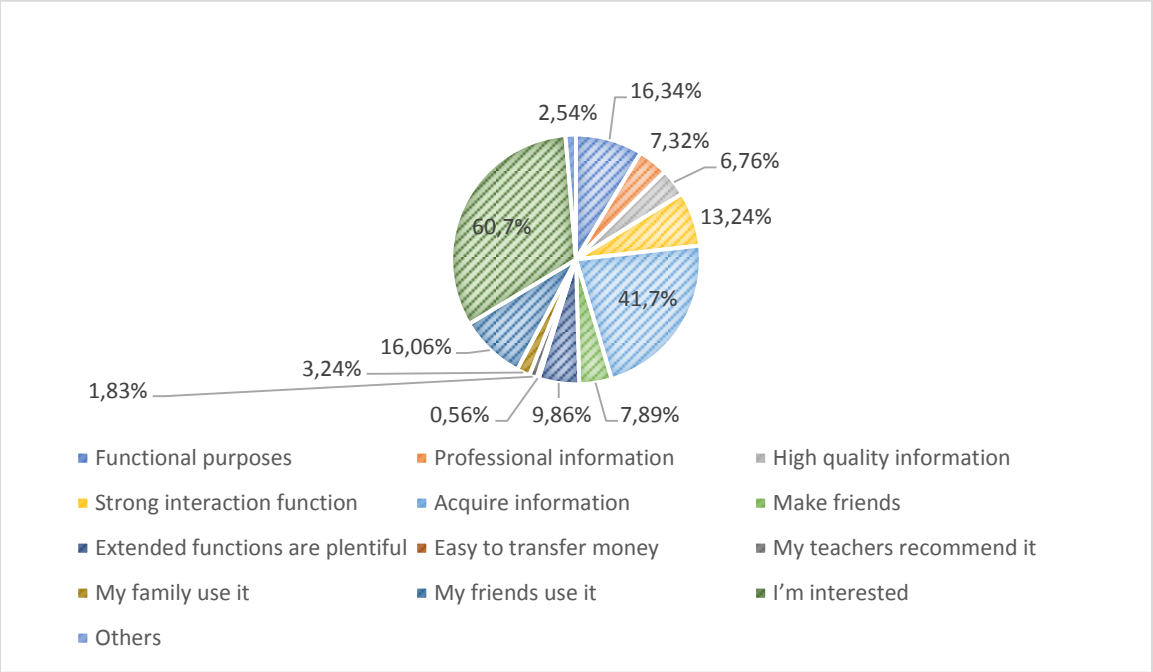


Figure 15: The distribution of the reasons to use BaideTieba

To sum up, due to the different social roles, different "groups" are formed in social media for college students. Different groups are connected with each other, and but are also separated by invisible barriers. The information shared in different groups vary dramatically. Only hot topics can spread through the barriers to other groups[33-35]. "Within-group social interactions" is very popular in social media for college students. The leadership power and influence of these groups are growing. We investigated one Weibo account "PITD Asian PhD Torturing Group" which is established and operated by PhDs from East China Normal University, Durham University, KyungHee University, and University of Science and Technology of China, respectively. As of May 13th, 2018, this account has 130 thousand followers and 5,980 posts. Its followers are mainly Chinese graduate students, post-docs, young faculty, and professors around the world[34-36]. As a self-organization in social media, the PITD Asian PhD Torturing Group established its WeChat account that posts interesting and useful information daily. This group has significant influence among graduate students due to its interesting style and excellent operation. On the contrary, numerous groups serving college students are lack of professional operations. These groups are in the blind spot of regulation of colleges and universities. A large number of negative events such as the spreading of rumors originate from these groups.

Regarding these self-organized groups, schools are expected to guide their students in case of the "group polarization". One solution is to establish online social group at the class level—E-class. E-class is a culture building project for all universities in Shanghai and promoted by the Shanghai Education and Health Party Committee and Shanghai Education Committee with the support of the Center of InternetCulture Development. E-class is virtual community for college students and faculty, and integrates BBS, SNS, blog, microblog, mobile apps, etc. It includes campus apps such as news and address book, and also social apps such as blog, microblog, and forums. College counselors, faculty, and students can communicate online, share resources, and write blog articles. However, the percentage of students who use the app in some schools needs to be improved. Promotion and community maintenance also need further optimization.

The use of human-computer interaction in artificial intelligence technology can help students track "Hashtag" and then discuss and analyze the topic, which is also to enable them to find more similar people with common topics in their social interaction. The related functions of social media are also to realize the association between more users. The social media bias of college students is related to their communication styles. It can be seen that with the deepening of group stratification in social media and the particularity of social media connecting people, groups have become the communication places of rumors and other topics. Therefore, more attention should be paid to the guidance and management of information. Even though the recommendation function is realized by using human-computer interaction technology, the key point of the research is to effectively help students reduce their dependence on social media.

5. Conclusion

In conclusion, the use of hashtag function of college students in social media exhibit the characteristics of both social networking and media. Some social media platforms develop powerful information recommendation function based on their powerful computing capacity. Because the recommended information is generated based on the information viewed in the past, the acquisition of information will exhibit the "information cocoon" phenomenon—only likable but not useful information is recommended. The phenomenon will limit the dissemination of quality news and should cause close attention of all relevant parties.In the research process, the research on different college students is insufficient. In the following research, the social network situation will be studied from college students themselves. In the future research and development, the research of social media and college students' preferences will become an important research direction, and it is of great significance for the study of college students' psychology.

Acknowledgment

The authors express their sincere gratitude to the Shanghai University of Sport and the Shanghai Industry & Commerce Foreign Language College for institutional support. We are especially grateful to the student participants for their valuable contributions to the survey and interaction study.

Conflict of Interest

The authors declare that they have no known financial or personal conflicts of interest that could have influenced the research, authorship, or publication of this article.

Reference

1. Zhao Yunze, Zhang Jingwen, Xie Wenjing, Yu Jusheng. Social Media or Social Media? Translation and Analysis of a Group of Crucial Concepts. Journalism Review, 2015, (6): 63.
2. Wei Shaohua. The "Topic" Function of Social Media and the Diversified Propagation of Mass Sports. Journal of Zhengzhou University, 2018, (2):148-153.
3. Wei Shaohua. Research on the "Topic" Function of Chinese Social Media from the Perspective of Dialogue Theory, East China Normal University, 2017.
4. Swart J, Peters C, Broersma M. Sharing and Discussing News in Private Social Media Groups: The social function of news and current affairs in location-based, work-oriented and leisure-focused communities [J]. Digital Journalism, 2019, 7(2): 187-205.
5. Zappavigna M, Martin J R. # Communing affiliation: Social tagging as a resource for aligning around values in social media. Discourse, Context & Media, 2018, 22: 4-12.
6. Hilpert J C, Marchand G C. Complex systems research in educational psychology: Aligning theory and method. Educational Psychologist, 2018, 53(3): 185-202.
7. McCrudden M T, Marchand G. Multilevel mixed methods research and educational psychology. Educational Psychologist, 2020: 1-11.
8. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. Systematic review of research on artificial intelligence applications in higher education–where are the educators?. International Journal of Educational Technology in Higher Education ,2019,16 (1), 39.
9. Edwards, C., Edwards, A., Stoll, B., Lin, X., & Massey, N.Evaluations of an artificial intelligence instructor's voice: Social Identity Theory in human-robot interactions. Computers in Human Behavior ,2019,90 , 357-362.
10. Chen Peibo, Zhao Yanli, Zhao Mei. Analysis of the Impact of Career Panning on Soft Addiction Behavior of College Students. Chinese Higher Medical Education. 2016, (4): 55.
11. Shen, C.-w., Ho, J.-t., Ly, P. T. M., & Kuo, T.-c. Behavioural intentions of using virtual reality in learning: perspectives of acceptance of information technology and learning style. Virtual Reality. 2019,23(3), 313-324.
12. Blayney, J. A., Lewis, M. A., Kaysen, D., & Read, J. P. Examining the influence of gender and sexual motivation in college hookups. Journal of American College Health .2018, 66 (8), 739-746.
13. Shen, C.-w., Luong, T.-h., Ho, J.-t., & Djailani, I. Social media marketing of IT service companies: Analysis using a concept-linking mining approach. Industrial Marketing Management. 2019.
14. Shen, C.-w., Min, C., & Wang, C.-c. Analyzing the trend of O2O commerce by bilingual text mining on social media. Computers in Human Behavior. 2019, 101, 474-483.
15. Jeong B, Yoon J, Lee J M. Social media mining for product planning: A product opportunity mining approach based on topic modeling and sentiment analysis. International Journal of Information Management, 2019, 48: 280-290.
16. Peng J, Zhou Y, Sun X, et al. Social media based topic modeling for smart campus: a deep topical correlation analysis method. IEEE Access, 2018, 7: 7555-7564.

17. Blair, S. J., Bi, Y., & Mulvenna, M. D. Aggregated topic models for increasing social media topic coherence. Applied Intelligence .2020, 50 (1), 138-156.
18. Bail C A, Argyle L P, Brown T W, et al. Exposure to opposing views on social media can increase political polarization. Proceedings of the National Academy of Sciences, 2018, 115(37): 9216-9221.
19. Lund N F, Cohen S A, Scarles C. The power of social media storytelling in destination branding[J]. Journal of Destination Marketing & Management, 2018, 8: 271-280.
20. Resch, B., Usländer, F., & Havas, C. Combining machine-learning topic models and spatiotemporal analysis of social media data for disaster footprint and damage assessment. Cartography and Geographic Information Science , 2018, 45 (4), 362-376.
21. Oeldorf-Hirsch A. The role of engagement in learning from active and incidental news exposure on social media[J]. Mass communication and society, 2018, 21(2): 225-247.
22. Dong W, Liao S, Zhang Z. Leveraging financial social media data for corporate fraud detection[J]. Journal of Management Information Systems, 2018, 35(2): 461-487.
23. Müller, J. M., Pommeranz, B., Weisser, J., & Voigt, K. I. Digital, Social Media, and Mobile Marketing in industrial buying: Still in need of customer segmentation? Empirical evidence from Poland and Germany. Industrial Marketing Management .201873 , 70-83.
24. Wu, Y.J.; Liu, W.-J.; Yuan, C.-H. A mobile-based Barrier-free Service Transportation Platform for People with Disabilities. Comput. Hum. Behav. 2020, 107, 105776.
25. Yuan, C.-H, Wu, Y.J., Mobile instant messaging or face-to-face? Group interactions in cooperative simulations. Comput. Hum. Behav. 2020,113, 106508,
26. Qian, J., Song, B., Jin, Z., Wang, B., & Chen, H. Linking Empowering Leadership to Task Performance, Taking Charge, and Voice: The Mediating Role of Feedback-Seeking. Frontiers in psychology, 9, 2025.
27. Zhang, C., Fan, C., Yao, W., Hu, X., & Mostafavi, A. (2019). Social media for intelligent public information and warning in disasters: An interdisciplinary review. International Journal of Information Management. 2019, 49, 190-207.
28. Chen M. The Impact of Expatriates' Cross-Cultural Adjustment on Work Stress and Job Involvement in the High-Tech Industry. Front. Psychol. 2019, 10:2228.
29. Rogoza, R., Żemojtel-Piotrowska, M., Kwiatkowska, M. M., & Kwiatkowska, K.. The bright, the dark, and the blue face of narcissism: The Spectrum of Narcissism in its relations to the metatraits of personality, self-esteem, and the nomological network of shyness, loneliness, and empathy. Frontiers in psychology.9,2020. 343.
30. DeBate, R. D., Gatto, A., & Rafal, G. The effects of stigma on determinants of mental health help-seeking behaviors among male college students: an application of the information-motivation-behavioral skills model. American journal of men's health .2018,12 (5), 1286-1296.
31. Mahony, R., Blake, C., Matthews, J., Oâ€™Donnoghue, G., & Cunningham, C. Physical activity levels and self-determined motivation among future healthcare professionals: Utility of the Behavioral Regulation in Exercise Questionnaire (BREQ-2). Physiotherapy theory and practice .2018.
32. Newman, B. N., Strickler, J. G., O'Brien, C., Lui, T., & Lynch, M. Deconstructing perfectionism in college students: Patterns of behavior, emotion, and cognition. Personality and Individual Differences ,2019, 145 , 106-111.
33. Tiraieyari, N., & Krauss, S. E. Predicting youth participation in urban agriculture in Malaysia: insights from the theory of planned behavior and the functional approach to volunteer motivation. Agriculture and Human Values.2018, 35 (3), 637-650.
34. Villarosa, M. C., Messer, M. A., Madson, M. B., & Zeigler-Hill, V. Depressive symptoms and drinking outcomes: The mediating role of drinking motives and protective behavioral strategies among college students. Substance Use & Misuse, 2018, 53 (1), 143-153.
35. Marino, E. N., & Fromme, K. Alcohol-induced blackouts, subjective intoxication, and motivation to decrease drinking: Prospective examination of the transition out of college. Addictive behaviors. 2018, 80, 89-94.

36. Sogari, G., Velez-Argumedo, C., Gómez, M. I., & Mora, C. College students and eating habits: A study using an ecological model for healthy behavior. Nutrients,2018, 10 (12), 1823.

RESEARCH ARTICLE

What Influences the Environmental Actions of College Students in Mainland China; Environmental Literacy as an Analytical Framework

Dr.
Xuefeng Zhang
Shanghai Customs College
Shanghai, China

Corresponding, Dr.
Weihua Lyu
School of Marxism, Guilin Medical University
Guilin, China
E-mail: weihualyu@yeah.net

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Mainland China; college students; environmental education; environmental literacy; environmental action

Abstract

Environmental literacy has become a widely recognized index for evaluating the effectiveness of environmental education and represents a global consensus on educational values. Understanding the level of environmental literacy and the factors influencing environmental action remain central concerns in environmental education research.

This study examines the environmental literacy of college students in mainland China using an analytical framework composed of three variable groups: environmental knowledge, environmental awareness, and environmental skills. A questionnaire survey was conducted among students in Shanghai Municipality, Anhui Province, and Guangxi Province, covering three academic disciplines across regions with differing levels of economic development. A total of 1,890 valid responses were analyzed.

Descriptive statistical methods and hierarchical regression analysis yielded the following findings:

1. Chinese college students demonstrate relatively low levels of environmental action. They primarily engage in ecologically civilized behavior but show limited participation in civic actions that benefit broader society. Persuasion-induced behavior is present but inconsistent.
2. The overall level of environmental literacy among these students is moderate. Of the three variable groups, awareness is the strongest dimension, while knowledge and skills remain weaker.
3. When applied synchronously, the three environmental literacy variables explain up to 44.8% of variance in environmental action. Among them, environmental desire, behavioral intention, and civic participation skills emerge as the most significant predictors of environmental action.

These findings provide important insights for improving environmental education in Chinese higher education institutions. Recommendations emphasize strengthening civic participation skills and fostering environmental

behavioral intent as essential for enhancing students' overall environmental action.

Citation. Zhang X., Lyu W. (2025). What Influences the Environmental Actions of College Students in Mainland China; Environmental Literacy as an Analytical Framework. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 54–69. https://doi.org/10.56352/sei/8.11.4

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.05.2025	Accepted: 14.08.2025	Published: 03.09.2025 (available online)

1. Introduction

Since the 1950s, humankind has caused unprecedented damage to the ecological environment through the combined effects of rapid population growth, technological revolutions, and unsustainable consumption patterns. The resulting environmental pollution and ecological crises have undermined human security and well-being. A deeper understanding of the relationship between human behavior and the underlying mechanisms of environmental problems is therefore essential, and environmental education has emerged as a critical area of global concern.

The concept of **environmental education** was first formally discussed at an international conference hosted by Kiel University, Germany, in 1965. Later, UNESCO and the International Union for Conservation of Nature (IUCN) further developed the concept during a 1970 Nevada, USA, conference. At the 1972 United Nations Conference on the Human Environment in Stockholm, the slogan *"There is only one Earth for humans"* was introduced, and "environmental education" was officially defined. Subsequently, UNESCO and UNEP co-hosted the landmark **Tbilisi Conference on Environmental Education** in 1977, which articulated five key objectives of environmental education: awareness, knowledge, attitudes, skills, and participation (UNESCO, 1978). The vision was that environmentally literate citizens would take individual and collective actions to mitigate environmental challenges.

Environmental action—also referred to as **responsible environmental behavior (REB)**—has long been considered the ultimate goal of environmental education (Hungerford & Volk, 1990; Roth, 1992). Early theories assumed that environmental knowledge would lead to positive attitudes, which in turn would result in pro-environmental behaviors. However, subsequent studies demonstrated that knowledge alone does not reliably predict environmental action (Hungerford & Volk, 1990; Jensen & Schnack, 1997; Pelletier et al., 1998). Consequently, the traditional **knowledge–attitude–behavior model** was gradually replaced with more comprehensive models from the 1980s onward. Among these are the **environmental literacy model** (Hungerford & Tomera, 1985), the **REB model** (Hines et al., 1985), and the **environmental citizenship behavior model** (Hungerford & Volk, 1990).

The cultivation of **environmental literacy** is now widely recognized as the foundation of effective environmental education. Indicators such as integration of science and technology into curricula, sustainable development education, and citizen literacy initiatives have become globally accepted benchmarks for assessing progress in this domain. International studies—ranging from Coyle's (2005) large-scale U.S. survey of adult environmental literacy, to Teksoz et al.'s (2012) examination of Turkish college students, to Shephard et al.'s (2014) research in New Zealand—have collectively highlighted significant gaps in environmental literacy across age groups and national contexts.

In **mainland China**, environmental literacy research began in the 1990s, often linked to broader studies of environmental ethics and awareness. Early surveys (e.g., China National Research Center for Science & Technology, 1994; China Environment News, 1994) found sharp differences between urban and rural populations, and between education levels, in environmental awareness. National studies in 1995 and 1998 confirmed the correlation between education and environmental awareness (China Environmental Protection Foundation & Renmin University; China State Environmental Protection Administration). However, later research (Liu & Lv, 2005) revealed a gap between knowledge/concern and actual participation in environmental initiatives among Chinese college students.

In 2013, the Chinese government formalized this agenda with the release of *Environment and Health Literacy of Chinese Citizens*, which provided key indicators for assessing environmental and health literacy. This policy document underscored the central role of education in achieving ecological modernization. Within this framework, college students are viewed as a **strategic group** whose environmental actions are critical for China's transition toward ecological civilization. Against this background, the present study examines the environmental literacy of Chinese college students and identifies the factors influencing their environmental actions.

2. LITERATURE REVIEW

The concept of **environmental literacy** was first introduced by Charles Roth in 1968, referring to the ability to perceive, understand, and act upon environmental systems in a way that preserves their integrity (Disinger & Roth, 1992). Environmental literacy is generally conceptualized as progressing through four stages: cognition, concern, understanding, and action. Harvey (1977) expanded this framework by distinguishing three levels: environmental knowledge, environmental competence, and environmental concern.

Hungerford and colleagues (1985) refined the construct, emphasizing that truly environmentally literate citizens possess ecological knowledge, sensitivity, values, beliefs, and behavioral strategies that enable them to take effective environmental action. Roth (1992) and Wilke (1995) further argued that cultivating environmental literacy is the cornerstone of environmental education, as it enhances individuals' capacity for environmental participation.

International research has provided comparative insights into environmental literacy. For example, the U.S. **National Environmental Education & Training Foundation (NEETF)** surveyed adults from 1997–2000 and revealed widespread misconceptions, with only 12% demonstrating basic energy knowledge and 10% taking proactive steps to reduce consumption (Coyle, 2005). Similarly, Teksoz et al. (2012) found that Turkish college students' environmental behaviors were influenced by knowledge, attitudes, and responsibility, while Shephard et

al. (2014) reported mixed levels of literacy among New Zealand students. McBeth et al. (2014) advanced the field by designing indices for measuring environmental literacy among U.S. middle-school students, offering a methodological benchmark for subsequent studies.

Within **China**, environmental literacy research has traditionally been embedded in studies of environmental awareness and ethics. Early surveys demonstrated that higher education levels correlate strongly with increased environmental awareness (China Environmental Protection Foundation, 1995). However, studies of Chinese college students indicate that while knowledge and concern are evident, active civic participation remains limited (Liu & Lv, 2005). More recently, national policy documents have framed environmental and health literacy as essential indicators of modernization, emphasizing the role of youth and higher education in achieving sustainability (PRC, 2013).

Taken together, the literature suggests that while environmental literacy is a global priority, its influence on actual **environmental action** remains underexplored, particularly in the Chinese context. This study addresses this gap by investigating the predictive role of knowledge, awareness, and skills in shaping the environmental behavior of Chinese college students.

3. METHODOLOGY (TO CONTINUE ARTICLE)

3.1. Research Design

This study adopts a quantitative survey-based research design to examine the relationship between environmental literacy and environmental action among Chinese college students. The conceptual framework is grounded in three dimensions of environmental literacy—knowledge, awareness, and skills—considered predictors of responsible environmental behavior.

3.2. Sample and Data Collection

A structured questionnaire was administered to college students in three regions of mainland China representing different levels of socioeconomic development: Shanghai Municipality (developed), Anhui Province (developing), and Guangxi Province (less developed). Students were sampled from three academic disciplines (social sciences, natural sciences, and applied sciences). Out of the distributed surveys, **1,890 valid responses** were collected.

3.3. Measurement Instruments

The questionnaire comprised four sections:

1. **Demographic information** (gender, age, major, region).

2. **Environmental knowledge** (10 multiple-choice items assessing familiarity with ecological concepts, policies, and sustainability issues).

3. **Environmental awareness** (12 Likert-scale items measuring concern, values, and attitudes toward environmental issues).

4. **Environmental skills and actions** (15 items assessing civic participation, ecological behaviors, and behavioral intentions).

Reliability and validity of the instrument were confirmed through pilot testing with 120 students prior to the main survey. Cronbach's alpha values exceeded the 0.80 threshold across all subscales, confirming internal consistency.

3.4. Data Analysis

Data were analyzed using **SPSS 26.0**. Descriptive statistics were employed to assess baseline levels of literacy and action. Hierarchical regression analysis was conducted to examine the predictive power of environmental knowledge, awareness, and skills on environmental action.

2.3 International and Domestic Studies on Environmental Literacy

Hodgkinson and Innes (2001) conducted a survey of 399 first-year students across ten academic majors at Murdoch University, Australia. Their findings revealed significant variation in environmental attitudes depending on field of study. Students majoring in environmental studies, biology, and sociology scored highest, followed by those in veterinary science, psychology, and anthropology. By contrast, students of law, business, and computer science demonstrated relatively weak environmental attitudes. Importantly, the study also found that students were reluctant to sacrifice economic benefits for environmental protection, highlighting the influence of economic and political perspectives on environmental attitudes.

Similar investigations were carried out in Turkey in 2006, where Teksoz et al. (2012) examined environmental knowledge, attitude, concern, responsibility, and outdoor activity among 1,345 college students. Their results showed that environmental knowledge was positively correlated with environmental attitudes, concern, and responsibility, but negatively correlated with leisure outdoor activities. Moreover, environmental attitude was found to influence responsibility, while environmental concern was a predictor of both attitude and outdoor leisure activity.

In New Zealand, Shephard et al. (2014) investigated environmental literacy in 2012, focusing on knowledge, affective dimensions, and competence. Their findings suggested no significant gender differences in environmental knowledge and attitudes. However, environmental literacy varied significantly across disciplines, with students in certain fields demonstrating stronger knowledge and practical abilities than others.

Levine and Strube (2012), in the United States, studied the relationships among environmental attitude, knowledge, intention, and behavior. They reported that environmental knowledge and intention were reliable predictors of environmental behavior, while attitude alone was not. Notably, intention served as a mediating variable between attitude and behavior.

In the Chinese context, Marcinkowski and Zhu (2015) developed the Undergraduate Students Environmental Literacy Instrument (USELI) to measure environmental literacy across variables such as awareness, knowledge, and skills, assessing their predictive influence on students' environmental actions.

The earliest targeted research on Chinese college students' environmental literacy can be traced back to the early 2000s. Chen and Lou (2003), at Northeastern University in Shenyang, designed a three-stage, four-layer index system to evaluate environmental literacy. Their survey of literature and science majors revealed that students performed reasonably well overall. Similarly, Zeng (2004) at Nanjing Normal University constructed an environmental literacy evaluation index and surveyed students across 23 specialties in 13 departments, highlighting comparable patterns.

Liu and Lyu (2005) expanded this work by applying quota sampling to survey students from seven Beijing universities, across fields including finance, economics, engineering, medicine, and forestry. While students reported moderate environmental knowledge and awareness of environmental issues, their participation in environmental protection activities remained minimal.

Later studies provided more nuanced insights. Bai (2007) proposed a three-dimensional model comprising knowledge, affect, and behavior. Results indicated that although students paid attention to environmental events and demonstrated a sense of responsibility, their awareness was primarily self-interested rather than grounded in sustainability ethics. Actual participation was limited to basic voluntary activities such as tree planting, waste battery collection, and recycling campaigns.

Collectively, these studies underscore that while Chinese college students possess some level of environmental literacy, active engagement in environmental protection remains insufficient. Furthermore, previous research has often focused on descriptive assessment, rather than systematically analyzing the predictive influence of literacy variables—knowledge, awareness, and skills—on environmental action. The present study addresses this gap.

3. RESEARCH METHODS

3.1. Research Framework and Hypotheses

This study builds upon three widely recognized models: the **Environmental Literacy Model** (Hungerford & Tomera, 1985), the **Responsible Environmental Behavior Model** (Hines et al., 1987), and the **Environmental Citizenship Behavior Model** (Hungerford & Volk, 1990). Based on these frameworks, environmental literacy factors were categorized into three dimensions:

- **Knowledge variables**: ecological and environmental science knowledge.
- **Awareness variables**: environmental sensitivity, sense of responsibility, environmental desire, and behavioral intention.
- **Skill variables**: analytical ability in addressing environmental issues and civic participation skills.

The proposed conceptual framework is illustrated in **Figure 1**. Statistical analyses included Pearson correlation tests, t-tests, and F-tests for relationships among categorical and dependent variables, as well as hierarchical regression to examine predictive validity.

Figure 1. Research framework (conceptual model).

Research Problems

The study addressed the following questions:

1. What is the current level of environmental literacy among college students in mainland China (measured across sensitivity, responsibility, desire, intention, knowledge, skills, and action)?

2. What are the relationships between awareness variables and environmental actions?

3. How do awareness and knowledge variables jointly influence environmental actions?

4. How do awareness, knowledge, and skill variables collectively predict environmental actions?

Research Hypotheses

1. Awareness variables (sensitivity, responsibility, desire, and intention) significantly predict environmental actions.

2. Awareness variables and knowledge variables jointly serve as significant predictors of environmental actions.

3. Awareness, knowledge, and skill variables collectively represent significant predictors of environmental actions.

3.2. Sample and Data Collection

Respondents were selected from universities in Shanghai Municipality (developed region), Anhui Province (moderately developed), and Guangxi Province (less developed). To ensure representativeness, students from three disciplinary clusters were surveyed: humanities and social sciences, business management, and natural/technical sciences.

A total of **2,200 questionnaires** were distributed through faculty coordinators, with **1,952 returned**. To balance class-year representation, stratified random selection was employed, yielding a final valid dataset of **1,890 respondents**. The breakdown included:

- **Gender**: 968 males (51.2%), 922 females (48.8%).

- **Year level**: 478 freshmen (25.3%), 468 sophomores (24.8%), 476 juniors (25.2%), 467 seniors (24.7%).
- **Region**: 616 from Shanghai (32.6%), 663 from Anhui (35.1%), 611 from Guangxi (32.3%).
- **Discipline**: 542 humanities/social sciences (28.7%), 399 business management (21.1%), 949 science/technology (50.2%).
- **Birthplace**: 975 rural (51.6%), 886 urban (46.9%), 29 other (1.5%).

Table 1. Demographic characteristics of respondents.

Variable	Category	n	%
Gender	Male	968	51.2
	Female	922	48.8
Year level	Freshman	478	25.3
	Sophomore	468	24.8
	Junior	476	25.2
	Senior	467	24.7
Region	Shanghai (developed)	616	32.6
	Anhui (moderately developed)	663	35.1
	Guangxi (less developed)	611	32.3
Discipline	Humanities/Social sciences	542	28.7
	Business management	399	21.1
	Science/Technology	949	50.2
Birthplace	Rural	975	51.6
	Urban	886	46.9
	Other	29	1.5

3.3. Research Instruments

To examine environmental literacy and related behaviors of college students in mainland China, a structured questionnaire was designed and implemented. The instrument consisted of five sections:

- **Part 1:** Three items assessing ecological and environmental science knowledge.
- **Part 2:** Four items on environmental sensitivity, four on sense of responsibility, four on environmental desire, and three on behavioral intention.
- **Part 3:** Four items on the ability to analyze environmental issues and four items on civic participation skills.
- **Part 4:** Twelve items addressing environmental actions (ecologically civilized behavior, persuasive actions, and civic actions).
- **Part 5:** Six items capturing demographic and personal background information.

Responses in Parts 1–4 were measured using a five-point Likert scale (1 = none/strong disagreement to 5 = frequent/strong agreement). Items for knowledge and skill were adapted from Zhu (2015), while measures for awareness and actions were primarily based on the **Undergraduate Students Environmental Literacy Instrument (USELI)** (Marcinkowski & Zhu, 2015) and Roth's (1998) environmental literacy scale.

The questionnaire underwent expert validation by six scholars of environmental education in Chinese universities. A pilot study with 216 students led to revisions, after which the finalized instrument was administered. Internal consistency was confirmed: Cronbach's α ranged from 0.81 to 0.91 across subscales, with overall reliability indices exceeding the recommended 0.80 threshold, thus indicating high reliability and validity.

4. RESULTS AND DISCUSSION

4.1. Current Environmental Literacy of College Students

4.1.1. Knowledge Variables

Results indicated a moderate level of ecological science knowledge (M = 3.28, SD = 0.68), with the highest scores reported for ecological systems (M = 3.52) and atmospheric science (M = 3.37). Students demonstrated relatively weaker knowledge regarding demographic change (M = 2.95).

Environmental science knowledge produced a higher overall mean (M = 3.51, SD = 0.65). Notably, knowledge of pollution (M = 3.58) and environment–health relationships (M = 3.79) ranked above knowledge of natural resources (M = 3.17). Together, these results suggest that Chinese college students have greater familiarity with immediate environmental health concerns than with systemic or resource-based ecological issues (Table 2).

4.1.2. Awareness Variables

Environmental awareness variables also yielded moderate results (Table 3). Students expressed strong affective ties to nature (M = 3.89) and high concern about anthropogenic damage to ecosystems (M = 3.65). Sense of responsibility was likewise evident, particularly with regard to adjusting consumption behaviors (M = 3.89) and acknowledging collective responsibility (M = 3.73).

Environmental desire was expressed most strongly in items linked to reactive behavior (M = 3.79), while proactive persistence scored lower (M = 3.35). Behavioral intention produced the strongest mean (M = 3.91), particularly in intentions to adopt low-carbon behaviors in daily life (M = 4.17). Collectively, these findings indicate that awareness levels are encouraging, but proactive civic commitment remains underdeveloped.

4.1.3. Skill Variables

Skills were evaluated through analytic and civic dimensions (Table 4). Students rated themselves moderately capable of collecting information (M = 3.52) and identifying local issues (M = 3.27). However, their civic participation skills were notably weaker, with the lowest mean across all variables (M = 2.85). For example, drafting protection plans (M = 2.84) and mobilizing resources (M = 2.57) were identified as particularly challenging tasks. This disparity suggests that while students possess analytical competence, translating such skills into civic participation remains a significant gap.

4.1.4. Environmental Actions

Environmental actions varied considerably across behavioral categories (Table 5). Ecologically civilized behaviors were most prevalent (M = 4.07), particularly saving resources (M = 4.32) and avoiding harm to wildlife (M = 4.12). Persuasive actions, such as encouraging peers to adopt environmentally friendly behaviors, were less frequent (M = 3.02). Civic actions scored the lowest (M = 1.79), indicating limited engagement with institutions or formal activism.

This gradient suggests that while personal pro-environmental behaviors are relatively common among Chinese students, collective and civic-oriented engagement remains underdeveloped.

4.2. Predictors of Environmental Action

4.2.1. Correlations Among Variables

Correlation analysis demonstrated significant relationships between environmental action and all independent variables ($p < 0.001$). The strongest correlations were observed between environmental action and **environmental desire (r = 0.56)**, **civic participation skills (r = 0.57)**, and **analytical ability (r = 0.53)**. Notably, knowledge variables (ecological science, r = 0.32; environmental science, r = 0.36) were positively correlated with action, but the strength of association was weaker compared to awareness and skills (Table 6).

These findings underscore that while knowledge is an important foundation, affective (awareness) and applied (skills) dimensions are more closely aligned with actual behavior.

4.2.2. Hierarchical Regression Analysis

To further explore predictive power, hierarchical regression models were tested (Table 7).

- **Model 1** included only awareness variables (sensitivity, responsibility, desire, and intention). Results showed that awareness accounted for **38.5% of the variance in environmental actions** ($R^2 = 0.385$, $p < 0.001$). Environmental desire ($\beta = 0.33$, $p < 0.001$) and behavioral intention ($\beta = 0.28$, $p < 0.001$) were the strongest predictors.

- **Model 2** added knowledge variables (ecological and environmental science). The explanatory power increased to **41.7%** ($\Delta R^2 = 0.032$). However, knowledge variables contributed modestly, with environmental science knowledge being marginally significant ($\beta = 0.11$, $p < 0.05$).

- **Model 3** incorporated skill variables (analytical ability and civic participation). The explanatory power increased substantially to **48.6%** ($\Delta R^2 = 0.069$). Among skills, civic participation ($\beta = 0.29$, $p < 0.001$) was the most robust predictor, while analytical ability also showed a significant effect ($\beta = 0.18$, $p < 0.001$).

Summary of Predictors: Across all models, **environmental desire, behavioral intention, and civic participation skills** emerged as the most consistent and significant predictors of environmental action. Knowledge played a secondary but supportive role.

4.3. Discussion

The findings confirm that environmental action among Chinese college students is primarily shaped by **psychological commitment (desire and intention)** and **practical competencies (skills)** rather than by knowledge alone. This aligns with earlier international studies (Levine & Strube, 2012; Teksoz et al., 2012) which also identified behavioral intention as a central mediator between knowledge, attitudes, and action.

The relatively high prevalence of ecologically civilized personal behaviors indicates that students are responsive to direct lifestyle changes requiring minimal institutional engagement. However, the low frequency of civic action highlights persistent barriers to collective environmental participation, such as limited institutional support, lack of training in advocacy, or cultural tendencies toward individual rather than collective activism.

From a policy and pedagogical perspective, these results suggest that higher education in China should move beyond knowledge transmission to emphasize **experiential learning, civic engagement training, and skill development**. For instance, integrating project-based environmental courses, student participation in local governance hearings, and structured partnerships with NGOs could strengthen civic competencies and promote deeper engagement.

4.2.2. Hierarchical Regression Models

In **Model 1**, regression analysis was performed with awareness variables (environmental sensitivity, responsibility, desire, and behavioral intention) as predictors of environmental action. The results (Table 7) indicate that the

model explained **37.2% of the variance** (R^2 = 0.37; Adjusted R^2 = 0.37; F = 110.04, p < 0.001). Among the predictors, **environmental desire (β = 0.28, p < 0.001)** and **behavioral intention (β = 0.22, p < 0.001)** exhibited the strongest effects. Sense of responsibility was not statistically significant. Thus, **Hypothesis 1** was partially supported.

In **Model 2**, knowledge variables (ecological and environmental science knowledge) were added to the awareness predictors. The explanatory power increased only marginally to **38.1%** (R^2 = 0.37; Adjusted R^2 = 0.38; F = 75.98, p < 0.001). Ecological science knowledge was statistically significant (β = 0.10, p < 0.05), while environmental science knowledge was not. The inclusion of knowledge slightly reduced the effects of awareness variables, but environmental desire and behavioral intention remained significant. Hence, **Hypothesis 2** was partly confirmed.

In **Model 3**, skill variables (ability to analyze environmental issues and civic participation skills) were introduced. This final model explained **44.8% of the variance** (R^2 = 0.46; Adjusted R^2 = 0.46; F = 79.15, p < 0.001). Among predictors, **civic participation skill emerged as the strongest factor (β = 0.30, p < 0.001)**, followed by behavioral intention (β = 0.21, p < 0.001) and environmental desire (β = 0.15, p < 0.001). Neither ecological knowledge nor analytical ability retained significance in this full model. Therefore, **Hypothesis 3** was also partially supported.

4.2.3. Discussion

The findings provide important insights into the environmental literacy of Chinese college students.

- **Awareness variables:** Students performed best in behavioral intention, particularly in adopting low-carbon practices and adjusting consumption habits. This reflects a readiness to act at the personal level, but less willingness to engage in broader civic activities.

- **Knowledge variables:** Students reported above-average environmental knowledge, particularly in pollution and health-related topics. However, knowledge contributed only marginally to predicting environmental action, suggesting that factual awareness alone is insufficient to drive behavior.

- **Skill variables:** Students demonstrated moderate ability to analyze issues, but their civic participation skills were underdeveloped. Importantly, when included in regression models, civic participation skill became the strongest predictor of environmental action, highlighting the need to cultivate applied competencies that connect knowledge and awareness to tangible behaviors.

- **Environmental action:** Students most frequently engaged in ecologically civilized behaviors (e.g., saving resources, waste sorting). Persuasive and civic actions were far less common, reflecting a pattern consistent with earlier studies in China and internationally.

These results are consistent with Zhu (2015), who identified behavioral intention and civic participation as key determinants of student action. The present study, however, differs in identifying **ecological knowledge** as a modest but significant predictor in intermediate models, suggesting that disciplinary differences or regional contexts may shape the role of knowledge in China.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

(1) Environmental action profile:

Chinese college students primarily engage in **individual-level ecological behaviors** such as resource saving and adopting low-carbon lifestyles. Persuasive and civic actions, which require influencing others or engaging with institutions, remain limited.

(2) Environmental literacy level:

Students demonstrated **moderate literacy** across all three dimensions. Knowledge scored 3.40, awareness 3.62, and skills 3.05 on a five-point scale. Although awareness is relatively strong, skills—especially civic participation—are underdeveloped.

(3) Predictors of environmental action:

Hierarchical regression showed that **awareness variables** alone explained 37.2% of environmental action variance, with desire and intention as the strongest predictors. Adding **knowledge** increased explanatory power only slightly (38.1%), while including **skills** raised the explanatory capacity to 44.8%. In the full model, **civic participation skill, behavioral intention, and environmental desire** were the most important predictors.

5.2. Recommendations

(1) Enhance civic participation skills

Universities should prioritize experiential learning opportunities that develop students' ability to design, implement, and evaluate environmental projects. Project-based courses, collaborations with NGOs, and participation in local governance can cultivate civic competencies.

(2) Foster behavioral intention and desire

Curricula should emphasize environmental ethics, responsibility, and value-based learning to strengthen students' internal motivation for action. Field visits to degraded and preserved environments could reinforce concern and desire to act.

(3) Integrate structured environmental education

China currently lacks specialized environmental education courses across most universities. Introducing **mandatory ecological civilization courses** and embedding sustainability themes into existing curricula could help bridge this gap.

(4) Advance environmental education legislation

Unlike many countries with national frameworks, China has yet to legislate environmental education. Enacting supportive policies could institutionalize standards, accelerate progress, and ensure equitable access across regions.

(5) Improve measurement instruments

This study relied partly on self-assessment, which may introduce bias. Future research should develop

standardized, validated instruments that more accurately capture environmental literacy dimensions. Additional variables, such as social context and personal development history, should also be integrated into models to improve explanatory power beyond the current 44.8%.

Acknowledgments

This research was supported by the Ministry of Education in China (Project of Humanities and Social Sciences, Grant No. 15YJC710040) and by the Educational Research Project of Shanghai (Grant No. C18077). The authors also thank the participating universities and students for their cooperation.

Conflict of Interest

The authors declare **no conflict of interest** related to this study. All procedures and analyses were conducted with academic independence and integrity.

References

2. Bai, Y. (2007). Survey and analysis of students' environmental literacy in normal universities. *Geographical Education, 6*, 72–73. [in Chinese]

3. China Environmental Protection Foundation & Renmin University of China. (1995). *Survey on national environmental awareness.* [in Chinese]

4. Chen, D., & Lou, C. (2003). Assessment and model of environmental literacy and analysis of verification. *Journal of Northeastern University (Natural Science), 24*(2), 170–174. [in Chinese]

5. Coyle, K. (2005). *Environmental literacy in America: What ten years of NEETF/Roper research and related studies say about environmental literacy in the U.S.* Washington, DC: The National Environmental Education & Training Foundation.

6. Disinger, J. F., & Roth, C. E. (1992). *Environmental literacy.* Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

7. Harvey, G. (1977). A conceptualization of environmental education. In J. Aldrich, A. Blackburn, & G. Abel (Eds.), *A report on the North American Regional Seminar on Environmental Education* (pp. 66–72). Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education. (ERIC Document Reproduction Service No. ED 143 505).

8. Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *The Journal of Environmental Education, 18*(2), 1–8. https://doi.org/10.1080/00958964.1987.9943482

9. Hodgkinson, S. P., & Innes, J. M. (2001). The attitudinal influence of career orientation in first-year university students: Environmental attitudes as a function of degree choice. *The Journal of Environmental Education, 32*(3), 37–40. https://doi.org/10.1080/00958960109599196

10. Hungerford, H. R., & Volk, T. L. (1990). Changing learner behavior through environmental education. *The Journal of Environmental Education, 21*(3), 8–21. https://doi.org/10.1080/00958964.1990.10753743

11. Hungerford, H. R., & Tomera, A. (1985). *Science teaching methods for the elementary school: A work text.* Champaign, IL: Stipes Publishing Company.

12. Liu, T., & Lyu, J. (2005). Investigation on environmental awareness of college students in Beijing. *Environmental Education, 1*, 36–37. [in Chinese]

13. Jensen, B. B., & Schnack, K. (1997). The action competence approach in environmental education. *Environmental Education Research, 3*(2), 163–178. https://doi.org/10.1080/1350462970030205

14. McBeth, B., Marcinkowski, T., Giannoulis, C., Hungerford, H., & Howell, J. (2014). *Secondary analyses of the national environmental literacy assessment: Phase one & phase two student, teacher, program, and school surveys.* Washington, DC: National Oceanic and Atmospheric Administration. http://dev.naaee.net/sites/default/files/eepro/resource/finalresearchreport.pdf

15. Pelletier, L. G., Tuson, K. M., Green-Demers, I., Noels, K., & Beaton, A. M. (1998). Why are you doing things for the environment? The Motivation Toward the Environment Scale (MTES). *Journal of Applied Social Psychology, 28*(5), 437–468. https://doi.org/10.1111/j.1559-1816.1998.tb01714.x

16. Research Group of Environmental Awareness of Chinese Residents. (1995, August 2). Environmental awareness: Survey on residents in Beijing and Shanghai. *Beijing Youth Daily*, p. 04. [in Chinese]

17. Roth, C. E. (1992). *Environmental literacy: Its roots, evolution and direction in the 1990s.* Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

18. Shephard, K., Harraway, J., Lovelock, B., Skeaff, S., Slooten, L., Strack, M., & Jowett, T. (2014). Is the environmental literacy of university students measurable? *Environmental Education Research, 20*(4), 476–495. https://doi.org/10.1080/13504622.2013.816268

19. State Environmental Protection Administration & Ministry of Education of PRC. (1998). *Report on national public environmental awareness.* [in Chinese]

20. Survey on environmental awareness of Chinese elementary and middle school students. (1994, January 5). *China Environment News*, p. 05. [in Chinese]

21. Teksoz, G., Sahin, E., & Tekkaya-Oztekin, C. (2012). Modeling environmental literacy of university students. *Journal of Science Education and Technology, 21*(1), 157–166. https://doi.org/10.1007/s10956-011-9294-3

22. UNESCO. (1978). *Intergovernmental Conference on Environmental Education: Final Report*. Paris: UNESCO.

23. Wilke, R. (1995). Environmental literacy and the college curriculum. *EPA Journal, 21*(2), 28–30.

24. Zeng, Z. (2004). *Theory and assessment of environmental literacy*. Nanjing: Nanjing Normal University. [in Chinese]

25. Zhu, Y. (2015). *An assessment of environmental literacy among undergraduate students at two national universities in Hubei province, China* (Doctoral dissertation). Florida Institute of Technology, Melbourne, FL. Unpublished.

RESEARCH ARTICLE

Towards the formation of a national committee to combat racial and regional discrimination and hate speech

Khene Mohamed Ridha
Dr.
University of Biskra, faculty of law, department of public law
Algeria
Email : mridha.khene@univ-biskra.dz; Orcid: 0009-0000-1332-5210

Riadh Dench
Dr.
Universiry of Biskra, faculty of law, department of public law
Algeria
E-mail: riadh.dench@univ-biskra.dz; Orcid: 0009-0001-0734-3252

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Racial discrimination, hate speech, committee, human rights, equality.

Abstract
Racial discrimination is a blatant violation of human rights in Algeria that must be addressed by all means and adopting internal and international tools to limit it. This can only be achieved by assigning the task to a committee specialized in this matter and by developing a special law to prevent and combat racial discrimination, given that the work is linked to the performance of an international obligation on the one hand and a national duty on the other hand, which achieves internal stability and security, and prevents the unity of the people and the national territory from being exposed to division. The existence of Law No. 05 is not sufficient.-20, which includes the prevention and combating of discrimination and hate speech, but rather requires a mechanism for its implementation similar to what is in effect under international law.

Citation. Khene M. R., Riadh D. (2025). Towards the formation of a national committee to combat racial and regional discrimination and hate speech. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 70–76. https://doi.org/10.56352/sei/8.11.5

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 06.01.2025 | Accepted: 04.05.2025 | Published: 26.08.2025 (available online)

Introduction

The crime of racial discrimination is one of the most significant forms of human rights violations that has long captured humanity's attention in searching for tools and mechanisms to eliminate it, due to its blatant infringement on the natural human rights established by various instruments and declarations concerning human rights, and because it undermines equality, which is the principle and fundamental pillar for safeguarding human rights and dignity.

Therefore, countries have collectively or individually sought to find appropriate solutions that enable them to combat racial discrimination in all its forms, the foremost of which is the culmination of international community efforts in issuing a declaration to combat all forms of racial discrimination, followed by the Convention on the Elimination of All Forms of Racial Discrimination, which clarified the concept of racial discrimination, its causes, and means to curb it. This includes the establishment of a committee entrusted with monitoring and documenting all human rights violations based on racial discrimination in all its forms. The latter defined the composition, tasks, and working procedures of the Convention on the Elimination of All Forms of Racial Discrimination to implement its provisions.

Algeria, like other members of the international community, has been concerned and has rushed to establish the rules and mechanisms necessary to protect individuals' rights from all forms of violations that undermine the principle of equality enshrined in its constitution and laws. This commitment stems from its obligation to implement the content of international agreements it has ratified. Among the forms of human rights violations

that Algeria has sought to combat is racial discrimination, which it has rejected through its constitution and criminalized under the Algerian Penal Code.

Algeria's interest in the crime of racial discrimination increased, especially during the period of widespread popular movement in 2019, which witnessed the emergence of a strange phenomenon in society: speeches of discrimination and the spread of hatred among citizens, threatening the safety and unity of the national territory. This prompted the relevant authorities to think more seriously and deeply about the necessity of swiftly putting an end to this behavior that contradicts the constitution and the laws of the republic and is inconsistent with Algerian norms and beliefs based on unity. The authorities translated this idea by establishing a specific law to combat racial discrimination, referred to as the Law on the Prevention of Discrimination and Hate Speech and its Combat, under number 05-20 in 2020. This law is characterized by a clear definition of the forms of racial discrimination, means of prevention, methods of combating it, and the establishment of a national observatory for the prevention of discrimination and hate speech under the President of the Republic.

The establishment of a national observatory for the prevention of discrimination and hate speech (Jaoui, 2022, pp. 517–518)The President of the Republic has prompted us to question its effectiveness and ability to achieve the provisions of Law 05-20 on the one hand and the objectives of public authority on the other, especially since the law does not specify effective mechanisms for the work of this observatory, but rather merely defines its composition and the powers assigned to it.

This is what led us, through this paper, to propose the idea of establishing a committee to combat racial discrimination by posing the following question: Can the establishment of a national committee to combat racial discrimination be more effective in implementing the content of Law 05-20 on the prevention and combating of discrimination and hate speech?

This is what we will try to clarify through two points:

- International tools to combat racial discrimination
- Submitting a proposal for the formation of the committee and its tasks

1. International Tools to combat racial discrimination

1. 1. Formation and sessions of the committee

The international community has adopted a variety of tools and mechanisms to protect human rights, particularly those related to combating racial discrimination in all its forms. The Committee on the Elimination of Racial Discrimination is one of the most important mechanisms entrusted, under the Convention on the Elimination of All Forms of Racial Discrimination, with the task of monitoring and combating racial discrimination.

Article 8 of the Convention stipulates: "A Committee shall be established to be called the Committee on the Elimination of Racial Discrimination, hereinafter referred to as the Committee."-The Committee works to combat all forms of racial discrimination in accordance with the mechanisms and tools established under the Convention and the internal regulations it has prepared for itself to achieve equality and human dignity in a manner that serves the achievement of international peace and security, which constitute one of the purposes of the United Nations (Dench, 2015, pp. 168–169).

This committee consists of a group of experts with high moral qualities who are chosen by secret ballot for a period of four years, with half being renewed after two years, taking into account fair geographical distribution (Al-Sheikh, 2008, pp. 61–62)The committee's internal regulations have detailed the method of selection. This committee operates under the chairmanship of one of its members and three assistants from among those elected to the committee (United Nations, 1965).

The Committee shall meet in two regular sessions at the Headquarters of the United Nations and may hold extraordinary sessions in accordance with the provisions of Article 3 of its Rules of Procedure. The Secretary-General of the United Nations shall be responsible for all arrangements relating to the holding of the Committee's sessions. Its meetings shall be public unless the Committee decides otherwise in accordance with its statute. Its meetings shall not be valid unless attended by a majority of its members. It shall take its decisions by a

show of hands, approving the proposal in whole or in part only. As for the languages used, they shall depend on what is stated in Article 26 of its Rules of Procedure (Committee on the Elimination of Racial Discrimination [CERD], n.d., Arts. 1 & 12; Dench, 2015, pp. 174–181) .

2. 2. Committee working tools

The committee relies in its work on two mechanisms: the reporting system and the complaints system(Alwan & Al-Musa, 2005, pp. 55–269).

A-Reporting mechanism

The Committee adopts a reporting system to monitor the extent to which States are complying with their obligations to combat racial discrimination. These reports include information on the legislative, judicial and administrative measures taken by States Parties to implement the provisions of the Convention on the Elimination of All Forms of Racial Discrimination in All Areas of Public Life. The Committee is the first human rights body to use the reporting mechanism. The Committee has determined the form and content of the reports to be submitted to it, which must include all the information and a brief description of the policy to eliminate all forms of racial discrimination adopted by the State, in addition to providing legal texts, judicial decisions and relevant regulations that assist the Committee in carrying out its tasks. Submitting reports every two years to the Secretary-General of the United Nations is mandatory for all States(CERD, n.d.-a).

The committee then studies the submitted reports(United Nations, 1965, Art. 9).It is submitted to the States Parties to the Convention, whether discrimination exists or not. It may also request additional information. The reports are studied in a session of which the State is aware, the date, duration and place. The Committee begins studying the reports, taking into account the extent of their conformity with the content of the guiding message that determined the form and content of the report. It then studies the report and submits appropriate proposals and recommendations that are communicated through the Secretary-General of the United Nations to the State concerned (CERD, n.d.-b, Arts. 64, 67, & 68).What distinguishes these proposals and recommendations is that they are merely a form of moral pressure on the state, nothing more, which is what is taken from the committee's work and affects its effectiveness.

B - Complaint mechanism

This mechanism is embodied by giving individuals or states the right to submit a complaint to the committee in the event that a state party to the Convention on the Elimination of All Forms of Racial Discrimination does not comply with its obligations. The committee is considered the first to use this mechanism as a mandatory system.

The Committee examines complaints submitted to it by states and individuals. It examines complaints submitted by states in accordance with the provisions of the first paragraph of Article 11 of the Convention on the Elimination of All Forms of Racial Discrimination by referring the complaint to the state concerned for the purpose of providing sufficient explanations and information to the Committee and referring it to the state that submitted the complaint. If the two states do not reach a solution within a period of six months, the Committee may consider the complaint referred to it to decide on it in accordance with the provisions of its domestic law and the rules of international law.

As for complaints submitted by individuals, the Committee may not receive communications unless at least ten States have deposited a declaration accepting the Committee's jurisdiction to consider complaints from individuals whose rights have been violated for reasons of discrimination. These complaints must include the information specified in Article 84 of the Committee's rules of procedure. The Committee then studies the complaint to ensure that it meets the required conditions, decides on the complaint, submits a report containing its opinion to the Secretary-General of the United Nations, and informs the concerned parties as well. The report submitted by the Committee constitutes an obligation incumbent upon the State, which must implement it based on its commitments under the Convention on the Elimination of All Forms of Racial Discrimination (Dench, 2015, pp. 190–203).

What can be said about the Committee's working mechanism is that, despite its shortcomings, the reports it prepares create obligations for the States Parties to the Convention on the Elimination of All Forms of Racial

Discrimination, which are enforceable in accordance with the rules of international law that oblige States to implement their pledges. This ensures the implementation of the content of the Convention, effectively contributes to the prevention and combating of racial discrimination, and achieves the principle of equality and human dignity.

2. Proposal to form a national committee to combat racial and regional discrimination and hate speech

Given the effectiveness of the work of the Committee on the Elimination of Racial Discrimination, we believe that this can also be applied to the Algerian Law on the Prevention and Combating of Discrimination and Hate Speech, No. 05-20, issued in April 2020, and we present the following proposal:

A chapter in the law is held under the title:

National Committee to Combat Racial Discrimination, Regionalism and Hate Speech

Article 1:

The National Human Rights Council has established a national committee called in the law the "National Committee to Combat Racial Discrimination, Regionalism and Hate Speech."

Article 2:

The committee consists of eleven members.

Article 3:

Committee members shall be chosen from among persons who meet the following conditions:

- The member must hold higher degrees.
- The member must be a researcher, scholar or worker in the field of human rights.
- Enjoy the original Algerian nationality.
- Enjoy civil and political rights.
- Non-partisan or political affiliation.
- Not to hold any ideas based on racial superiority or incitement to it.
- Enjoy good moral behavior.
- Not to have a criminal record.
- Enjoy integrity and neutrality.
- Taking into account the representation of all social and cultural particularities.

Article 4:

Members are chosen by appointment by the President of the Republic and on the proposal of the President of the National Council for Human Rights.

Article 5:

The Committee works to combat all forms of racial discrimination, racism and regionalism, and to reject hatred and intolerance.

It also works:

- The Committee monitors any violation of human rights based on discrimination and differentiation between citizens.
- The Committee shall submit periodic reports determining the human rights situation regarding the issue of discrimination, segregation, and the incitement and cultivation of hatred, and shall submit them to the National Council for Human Rights.

- The Committee shall work to track all forms of racial discrimination, regionalism, and hate speech, and to eliminate them in accordance with the mechanisms specified by this law.
- The Committee is developing a programme of work on how to track cases of racial discrimination and any other form of discrimination, hatred and intolerance.
- The Committee works to combat all forms of discrimination within public and private institutions, educational institutions, and places of worship.
- The Committee shall raise awareness of the seriousness of all forms of racial discrimination, racism, regionalism, and the incitement of hatred. It may also hold training courses and forums and participate in international conferences related to human rights and racial discrimination issues.
- The Committee monitors international developments on human rights issues, particularly those relating to discrimination, racial discrimination, hate speech and violence.

Article 6:

The committee performs its work according to two mechanisms:

- Reporting system
- Individual Complaints System

The Committee's internal regulations determine the forms and procedures by which these two mechanisms are implemented.

Article 7:

Committee sessions

- The National Committee holds two regular sessions a year to study the human rights situation, the extent to which all forms of racism, regionalism and hatred have been eliminated, and the procedures followed to eliminate them.
- The Committee may hold extraordinary sessions whenever necessary, at the request of the President of the National Human Rights Council, its Chairman, or at the request of half of its members.
- Each course lasts for twenty days, and the duration can be extended whenever necessary.
- The committee's decisions are taken by majority vote, and in the event of a tie, the chairman's vote shall prevail.
- Each session culminates in a report submitted to the President of the National Human Rights Council. In its report, the Committee may propose appropriate judicial and administrative follow-up measures and may request an investigation.
- The Committee may, in holding its sessions, call upon experts and specialists in the field of human rights and issues of racial discrimination.
- The Committee's internal regulations determine the form of reports, the method of selecting and participating experts, and the method of submitting a request for investigation.

Article 8:

The National Human Rights Council is responsible for notifying the relevant authorities of any form of racism, regionalism, hatred, or any matter aimed at creating division among citizens that violates the principle of equality, in order to enable them to challenge the reports submitted by the Committee.

The Committee's internal regulations determine the form of the appeal and the method of submitting and examining it.

Article 9:

The National Human Rights Council shall decide on appeals against the Committee's reports within one month, by a decision that is not subject to appeal.

Article 10:

The Committee may submit a proposal to the President of the Human Rights Council to refer cases relating to racial discrimination, racism, regionalism and incitement of hatred to the regionally competent Public Prosecutor.

Article 11:

The Committee may not, under any circumstances, consider complaints and reports submitted to it if they relate to cases that have been decided by a final judicial ruling before the competent regional judicial authorities.

Article 12:

Committee structures:

- The Committee shall consist of a Chairman who shall be elected from among the appointed members.
- The President shall be assisted in his work by a First Vice-President, who shall deputize for him in the event of his absence or the vacancy of the office of President.
- The Committee has branches tasked with monitoring and combating all forms of racial and regional discrimination and hate speech in the country. Each branch is headed by a member of the Committee, appointed by its Chairman after consulting the President of the National Human Rights Council.
- The Commission shall establish offices at the state and municipal levels, and its members shall be appointed by the President of the National Commission to Combat Racial Discrimination, Regionalism and Hate Speech, after consulting the President of the National Council for Human Rights.
- The heads of the provincial offices are selected by the President of the National Commission to Combat Racial Discrimination, Regionalism and Hate Speech.
- The heads of municipal offices are selected by the head of the provincial office after consulting the head of the National Committee to Combat Racial Discrimination, Regionalism and Hate Speech.
- The provincial offices, along with the municipal offices, shall submit monthly reports to the National Commission on all forms of racial discrimination, racial and regional segregation, and hate speech in the province and municipality, and on the extent to which the measures taken by the National Commission or the National Council for Human Rights have been implemented.
- The internal regulations of the Committee determine the membership and functional organization of the offices established by the National Committee to Combat Racial Discrimination, Regionalism and Hate Speech.

Article 13:

- The Committee shall serve for a renewable term of six years.
- Half of the committee members are renewed every three years.
- The Chairman of the Committee shall hold office for a term of six years, renewable only once.
- The appointed members of the National Committee and the heads of its provincial and municipal offices shall be on secondment to their institutions. As for the members chosen from among those who hold liberal professions, their fees shall be determined in accordance with the provisions of the Committee's internal regulations.
- The National Council for Human Rights shall bear all expenses related to the work of the Committee.

Article 14:

The Committee shall establish and regulate its internal regulations.

Conclusion

What can be achieved through this paper is the presentation of some results that we summarize as follows:

- The existence of a law against racial discrimination alone is not sufficient; it requires a body to oversee its implementation.

- The National Observatory for the Fight Against Racial Discrimination in Algeria is not sufficient to eliminate all forms of racial discrimination due to its lack of tools recognized in international law.

- A reporting and complaints mechanism has not been adopted in the work of the National Observatory for the Fight Against Racial Discrimination and its prevention.

- Racial discrimination is a serious crime that cannot be effectively addressed by national tools alone; it requires the use of international tools.

From the above, we can offer the following recommendation:

The Algerian legislator should establish a body similar to that provided for in the Convention on the Elimination of All Forms of Racial Discrimination and adopt the mechanisms it uses to monitor and combat racial discrimination, as this would be more effective in ensuring the implementation of Law No. 05-20 concerning the prevention of discrimination and hate speech and their combat.

References

1. Al-Sheikh, I. A. B. (2008). The international application of human rights agreements (Mechanisms and key issues). Dar Al-Nahda Al-Arabiya.

2. Alwan, M. Y., & Al-Musa, M. K. (2005). International human rights law (Sources and means of monitoring). Dar Al-Thaqafa for Publishing and Distribution.

3. Committee on the Elimination of Racial Discrimination. (n.d.-a). Guidelines on the form and content of reports to be submitted by States parties to the International Convention on the Elimination of All Forms of Racial Discrimination.

4. Committee on the Elimination of Racial Discrimination. (n.d.-b). Rules of procedure.

5. Dench, R. (2015). Combating the crime of racial discrimination between the United Nations and the International Criminal Court (PhD thesis). University of Biskra.

6. Jaoui, H. (2022). The crime of racial discrimination in Algerian legislation. Critical Journal of Law and Political Science, 17(1), 517–518. University of Tizi Ouzou.

7. United Nations. (1965). International Convention on the Elimination of All Forms of Racial Discrimination. Adopted by the United Nations General Assembly, entered into force in 1969.

RESEARCH ARTICLE

Electronic arbitration as a mechanism for resolving disputes in international trade contracts

Okba Khadraoui
Dr.
Department of law, faculty of law and political science, University of Algiers 1
Algeria
Email : o.khadraoui@univ-alger.dz ; Orcid:009-0001-3141-1783

Louria Zouaoui
Dr.
Department of law, Faculty of law and political science, University of bejaia
Algeria
E-mail: louria.zouaoui@univ-bejaia.dz; Orcid: 0009-0005-3460-8537

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Arbitration, international trade, electronic, dispute, international contract.

Abstract
The international commercial arbitration system is regarded as one of the most significant alternative conflict resolution processes, despite the fact that there are other alternatives to the legal system, including mediation, conciliation, and reconciliation. If classic arbitration is consistently the most popular alternative method for resolving disputes between two or more parties to an international business contract, regarding the judiciary's ability to resolve a particular dispute but when these methods evolved and became electronic, the situation remained unchanged. Contracts for e-commerce are frequently of an international commercial character. The most significant method of settling disagreements resulting from different worldwide business dealings that depend on cutting-edge communications and information technology is electronic arbitration. This happens either before or after the disagreement develops, following an agreement between the two parties to an international business transaction. Along with some restrictions unique to electronic arbitration, the most crucial of which being the means of communication between the disputing parties and the arbitrators, electronic arbitration follows the same procedures as traditional arbitration.

Citation. Khadraoui O., Zouaoui L. (2025). Electronic arbitration as a mechanism for resolving disputes in international trade contracts. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 77–89. https://doi.org/10.56352/sei/8.11.06

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.01.2025 | Accepted: 17.04.2025 | Published: 26.08.2025 (available online)

Introduction:

In recent years, the world has witnessed a qualitative shift in changing the methods and means of trade and concluding major deals, which used to require significant effort and money for travel to complete business transactions and sign contracts. The technological revolution in the field of communications and information technology, along with the emergence of what is known as the World Wide Web (the Internet), has transformed the world into a small village, where all commercial and non-commercial transactions can occur easily and conveniently, without the need for travel and waiting. It has also facilitated the resolution of disputes that may arise from the non-fulfillment of some international transactions, without the need for the physical presence of the parties involved in the settlement process at a specific location.

The widespread use of the Internet in the field of legal transactions in general, and in commercial transactions in particular, has led to the emergence of a new type of transaction known as electronic transactions, or what is commonly referred to as e-commerce. The Internet, which is considered a global revolution in our current era, comparable to the previous industrial revolution, is not confined by geographical borders. It has allowed participants to engage in various activities, such as shopping, advertising, and signing different contracts, without the need for travel and physical presence. As a result, the exchange of information and goods, making reservations, and other activities have become extremely easy, requiring minimal effort and time. It is worth noting that the electronic revolution, unlike the first industrial revolution, does not rely on natural resources, except to a small extent, while human resources represent the true capital necessary for this wealth. Human thought and the ability to innovate and develop are at the core of this revolution, while human effort is the means that transforms ideas into innovative, efficient, and profitable achievements.

Due to the increasing use of the Internet in various aspects of life, the number of disputes arising from these uses, especially in e-commerce, is on the rise, particularly with the establishment and registration of company websites, online trading, and the growing number of participants in e-commerce through online contracts, delayed delivery and payment processes, which lead to many disputes that require swift resolution away from regional and local judicial bodies, which have slow and tedious procedures and high costs. The burden of resorting to the judiciary has become significant for contractors in this field, making it no longer an acceptable means of resolving disputes arising from electronic transactions, especially e-commerce disputes that occur between parties of different nationalities and places of residence. Therefore, in light of this inefficiency, parties seek to take faster and more effective steps, agreeing to resort to arbitration to resolve any disputes that have arisen or may arise between them.

Given that ordinary arbitration does not keep pace sufficiently with the speed required for electronic transactions, what is known as electronic arbitration has emerged as a modern method for resolving disputes arising from the use of the Internet in transactions, particularly electronic transactions? Electronic arbitration responds to the characteristics of the e-commerce environment and provides a solution to the numerous obstacles it raises, such as the applicable law and the competent court, among others. Many websites have been created to assist in resolving disputes through electronic arbitration, the most notable of which is the World Intellectual Property Organization (WIPO) center, and e-commerce sites have begun to contract with it to resolve disputes that may arise between them and their clients.

The study of the topic of electronic arbitration in itself brings us face to face with many contentious issues that deserve a dedicated research study on their own. However, we will limit ourselves to pursuing one goal of this research, which is to determine the essence of electronic arbitration as a term and clarify its role in resolving e-commerce disputes, reaching an understanding of the substantive and procedural legal aspects related to it, all of which is considered a means to resolve e-commerce disputes.

The importance of the research stems from the reflection of the tremendous development in the world of communications and information technology on the completion of transactions in record times and resolving any disputes that may arise between parties using modern means that are compatible with the nature of electronic business conducted over the internet, which possesses advantages that are lost in courts and even traditional alternative dispute resolution methods. The significance of researching electronic arbitration lies in the fact that it has become an undeniable reality, especially in the world of cyberspace, regardless of the obstacles it faces, whether legal or technical.

As for the methodology adopted, we relied on the approach required by the subject of the study, which is represented in the descriptive analytical method, as we are in the process of analyzing some texts of international and regional agreements concerned with the subject of the international commercial arbitration system, including electronic arbitration, and the legal rules governing it, distinguishing them from the procedures governing traditional arbitration rules on the other hand.

The study presents the legal systems of the most prominent electronic arbitration centers and the procedures followed until the issuance of the decision, in addition to the position of the most significant related international treaties and some Arab arbitration laws regarding the binding nature of the arbitration decision and methods of proof.

Our research aims to understand the electronic arbitration system as one of the means of resolving disputes arising from international electronic trade contracts, and to understand the legal and procedural relationship between traditional arbitration and electronic arbitration, as well as its advantages and disadvantages, the mechanism by which it operates, and how electronic arbitration awards are enforced.

The issue: This study comes to analyze and answer a fundamental question:

What is the importance of the electronic arbitration system in resolving disputes related to international trade contracts?

This issue branches out into several sub-questions, which are:

- What is the concept of arbitration in international trade contracts?

- How does electronic arbitration differ from traditional arbitration?

- What are the main advantages of the electronic arbitration system?

1. The Concept of Electronic International Trade and Electronic Arbitration

1. 1. The Definition of an electronic international commercial contract

The World Trade Organization defined electronic commerce as: (an integrated set of operations for concluding deals, establishing commercial links, distributing, marketing, and selling products via the Internet), as defined by the Organization for Economic Cooperation and Development. However, the United Nations Commission on International Trade Law (UNCITRAL) approved a model for a unified draft law for electronic commerce, but it did not define the electronic international commercial contract. OECED It is defined as any business transaction based on the electronic exchange of data that occurs between businesses or individuals.).(Saad, 2024, p. 7)

International electronic commerce contracts refer to the integration of communication methods, data management, and security capabilities that facilitate the exchange of information related to the sale of goods and services. It is also defined as the process of selling, buying, or exchanging products, services, and information through a computer network, including the Internet. It is also defined as commerce conducted through an electronic medium, including commerce conducted via television, fax, the Internet, and dedicated communication networks(Shaat, 2018, p. 27)

What is meant by electronic contract? A contract that is subject in its organization to the general rules and provisions that govern the general theory of contract. It is concluded by agreement and consent between its two parties: the obligor and the acceptor. However, it is distinguished by being a contract concluded remotely between absent parties who are not present, using electronic media such as information devices and programs and other modern technical means that operate automatically and automatically once operating orders are issued to them.), and the electronic contract is used

for all actions subject to agreements on the network, mainly downloading programs or files from the network by entering the site's services, specifically those that sometimes require a special subscription or a financial fee. Or for the purpose of obtaining a service such as chat, news groups, advertising, and directories) or for the purpose of registration and contractual commitment to implement the service offered free of charge according to the terms of the site such as free mail services, free hosting, etc., and concluding legal transactions online such as buying, selling, renting, and other commercial transactions.

And Some have defined an e-commerce contract as a contract in which offers of goods and services are accepted by people in the same country or other countries through various electronic media, including the international information network (the Internet), with the aim of concluding the contract.

E-commerce also represents all types of commercial transactions that take place electronically via the international information network (the Internet). These transactions take place either between projects (between companies and suppliers of production inputs, or marketing or distribution facilities), or between companies and their consumer customers, or between establishments and official agencies.

Hence, electronic contracting has become characterized by the following characteristics (Bin Saeed, 2010, p. 37):

1- It is concluded remote, Without the physical presence of its parties.

2- It is concluded using electronic media..

3- It is often characterized by a commercial and consumerist nature..

4- It is often international in nature..

5- Electronic cash payment methods replacing regular cash.

6- It is carried out and implemented online without the need for physical presence .Example: books and the works and recordings.

1. 2. Electronic arbitration To settle international trade disputes

When it comes to settling commercial disputes, arbitration is thought to be an alternative to the legal system. In international contracts, it has become more popular, particularly in the sense that it is rare to find one without an arbitration clause for settling disputes arising from the contract. Arbitration is unquestionably a helpful tool. Its origins in settling disputes between people go back to the dawn of time, and it would be true to say that this is where the judiciary got its start. It got up and put on its beautiful garments, and its back was strengthened by the trust of those who looked to its judiciary (Salama, n.d., p. 5).because it is the closest to achieving justice. When deciding the dispute, Professor John Robert confirmed that: By defining the arbitration system as (achieving private justice, and according to it, disputes are removed from the jurisdiction of the general judiciary, in order for them to be decided by individuals entrusted with this task in the financial incident)(Robert, 1993, p. 6)Arbitration was also defined as (a method for settling disputes arising between countries by neutral official, diplomatic, or judicial figures, or by a mixed committee that investigates rights and justice. International arbitration requires the agreement of the two disputing parties)(Khadrawi, 2014, p. 10). and Optional arbitration It is arbitration In which the parties to a commercial contract agree to settle disputes that will arise or have arisen between them in relation to that contract by resorting to arbitration ,For example, Algerian company (A) buys a commodity from Egyptian company (B).,The contract stipulates that any dispute between the two parties arising from or related to the contract shall be referred to arbitration in accordance with the provisions of Egyptian law, or in accordance with the rules of the International Chamber of Commerce in Cairo, for example. In this example, if a

dispute actually arises between the two parties, it must be referred to arbitration at their discretion. If one of them resorts to the judiciary, the court before which the dispute is filed must refer it to arbitration if the conditions for such referral are met under its national law.

Arbitration in general is an agreement to refer a dispute to a specific person or persons to decide it without the competent court.(Abu Al-Wafa, 2007, p. 15),It is an agreement between two or more parties to refrain from resorting to natural justice and to resort to arbitration. It specifically refers to an agreement between two or more parties to resolve disputes that have arisen or will arise as a result of a contractual or non-contractual legal relationship by arbitration through one or more third parties chosen by them, who shall issue a binding ruling to resolve the dispute according to the applicable law, place, language and time chosen.

The arbitration system differs from the judiciary in several points, including:

- Arbitration requires the consent of the parties, both with regard to resorting to arbitration and choosing the arbitrator, unlike a judge whose jurisdiction is general and the litigants cannot choose the judge of their own free will.
- Arbitration has a specific jurisdiction and specific limits, while the judiciary has a general jurisdiction and a broader scope.
- In arbitration, the parties can remove the arbitrator before the ruling is issued, unlike the judiciary, where the litigants cannot remove or remove the judge, because his removal is within the jurisdiction of the authority appointed to him, and he is bound by the laws of the country in which he assumed the position of judge(Juman, 2008, p. 18).

1. 2. 1 the concept of electronic arbitration

Arbitration is a way to resolve the matter. the topic of contention, and this issue is left to one or more individuals known as the arbiter. Arbitrators or judges must be neutrally qualified, and the two arbitrators will resolve the disagreement in accordance with the agreement reached. They will serve as arbitrators between them and the parties, and their decision will be final and enforceable, (Al-Najjar, 2009, p. 17)It is a system for settling conflicts between natural or legal persons, whereby the parties to the dispute leave the responsibility of resolving it to arbitrators whom they pick of their own free will, instead of going to the judiciary. (Chatillon, 2007, p. 285) The jurist Jena Robert defined electronic arbitration as: "Creating a special space to withdraw disputes from the general judiciary and resolving them by resorting to arbitrators who possess the authority of judges to resolve a specific dispute." However, the Algerian legislator did not provide a legal definition for electronic arbitration and did not explicitly state this alternative system to the judiciary. Nevertheless, we can implicitly derive it by referring to Article 1040 of the Civil and Administrative Procedures Law 08. 09 dated February 25, 2008, amended and supplemented by Law No. 22. 13 dated July 12, 2022, where the legislator expanded the means of concluding an arbitration agreement that allow for written evidence, including various types of modern communication methods, including the internet.(Salawi& Lamia, 2025, p. 1170).

The quick creation and execution of contracts is the foundation of e-commerce, yet this is in contrast to the drawn-out processes of traditional courts. The parties to the dispute do not have to be in person before the arbitrators in electronic arbitration; instead, they can be heard by satellites and other electronic communication tools. Furthermore, the ease of the procedures speeds up the release of verdicts because documents and papers may be sent by email, and experts can be contacted directly or discussed online. As a result, there are many different types of international arbitration bodies, such as committees, chambers, organizations, or arbitration centers. The majority of nations have complied with the norms and principles set by the United Nations, including the UNCITRAL Model Law on International Commercial Arbitration and the UNCITRAL norms of 1976, as well as a number of arbitration agreements.

An electronic arbitration agreement means that the parties to the arbitration agree on an arbitration clause via modern means of communication (Suleiman, 2011, p. 112). Electronic arbitration can be defined as arbitration whose procedures are conducted over the Internet. It gains its electronic nature from the method in which it is carried out, as it

is done in an audio-visual manner through an open international network for remote communication, without the need for the parties in dispute and the arbitrators to meet in a specific location..

1. 2. 2 the Scope of application of electronic arbitration

Despite the legal issues that parties to these disputes may face when resorting to electronic international arbitration, particularly in the enforcement of foreign judgments under the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards of 1957, the situation becomes more complicated when the consumer enters the contractual relationship, making it not purely commercial, but of a mixed nature dominated by the aspect of adhesion, especially with the legislations' emphasis on issuing specific laws to protect consumers from abusive terms.

- Resorting to the electronic arbitration system can be done in two ways:
- - The arbitration institution has a pre-prepared model for this request available on its website, where the parties fill out this form and then click the submit button to send it directly to the arbitration institution via its website.
- - Writing the requests in the form of an electronic data message on a computer connected to the internet, using one of the electronic writing programs such as DOC, PDF, or RTF. Once the concerned party finishes writing the electronic arbitration request in this manner, they submit it.(Zaazoua&Zaazoua, 2022, p. 144).

1. 3. the Dimensions and advantages of electronic arbitration

Disputing parties resort to choosing the electronic arbitration system as an alternative system for settling disputes that arise between them regarding the implementation of international trade contracts, for the purposes or advantages they see in arbitration, compared to other means of resolving commercial disputes and disagreements.

1. 3. 1 Dimensions of electronic arbitration

Electronic arbitration aims to purify and secure the electronic work environment and related matters by settling or resolving existing electronic disputes, and providing advisory services that can prevent disputes from occurring, in order to create a healthy digital community, through the following:

- Providing arbitration services through external arbitrators via electronic communication channels to settle or resolve disputes arising from a legal relationship of an economic nature, whether contractual or non-contractual, whether in the public or private sector, or between them.

- Providing advisory expertise in electronic transactions, such as responding to requests from entities to complete a specific contract that has some deficiencies, or reviewing the provisions of a specific contract under certain circumstances that have arisen after its conclusion..

1. 3. the Advantages of Electronic Arbitration

The arbitration system holds significant importance in resolving disputes related to international trade contracts, due to the simplicity of procedures and the speed in resolving disputes, unlike the judiciary, which is characterized by complicated procedures and prolonged dispute resolution times. The international commercial arbitration tribunal includes specialized arbitrators in the technical aspects of the arbitration subject, facilitating a quicker resolution

compared to regular courts. Furthermore, the arbitration system is primarily based on the will and agreement of the disputing parties, who choose to resort to arbitration instead of litigation and select the type of arbitration (ad hoc or institutional), either in the form of a clause or an arbitration agreement, before or immediately after the dispute arises. After reaching a friendly resolution to the dispute through arbitration, the parties maintain their amicable relationship and their reputation in the field of commercial transactions, in addition to the freedom of the parties to choose the applicable law for resolving the international commercial dispute.

Traditional international commercial arbitration is characterized by numerous advantages, most notably that the diversity of international commercial transactions and their relation to contracts that sometimes involve complex conditions and technical details make the expert arbitrator more capable of understanding them than a legal practitioner. Additionally, the arbitration tribunal enjoys broader freedom regarding litigation procedures, such as managing and organizing sessions, notifications, and presenting data, which leads to the parties' confidence in the decision that the arbitrator or arbitration tribunal will issue to resolve the dispute(Bariri, 2004, p. 10).

1- There are other benefits to using electronic arbitration rather than traditional commercial arbitration or even national courts in e-commerce and e-contract issues. Among these benefits are:
2- 1. Using electronic arbitration, or online arbitration, eliminates the need for the disputing parties, witnesses, and experts to travel to the arbitration site, which may be distant from their homes or places of business.Because the disputants may be heard through online talks, this saves time and money on travel(Al-Rumi, n.d., p. 93).
3- This prevents the parties to the contract from being subject to legal and judicial oversight of electronic contracts. This avoids the legal non-recognition of these contracts or the difficulty of determining the applicable law and the competent court. This is not an easy matter under ordinary courts when a dispute is referred to them.
4- Speed of resolution in disputes: This feature greatly surpasses the slow pace and backlog of cases that typically occur in the corridors of national courts, especially with the increase in e-commerce contracts. This arbitration significantly outpaces the speed of resolving disputes presented to it compared to resorting to regular commercial arbitration, which requires a much longer duration than this arbitration. The reason for this is the physical presence of the parties and the arbitration panel, as well as the exchange of pleadings and documents between the parties to the case.(Mansour, 2009, p. 482).
5- Desire to present the dispute to experienced people: A private and trusted company that cares about and keeps pace with the development of e-commerce, especially in the technical and legal fields of this trade.
6- Confidentiality: This is an advantage of arbitration in terms of its existence and results at all stages, which prevents any damage to the reputation of the parties to the arbitration.
7- Ease of obtaining a ruling: Because documents can be submitted by email or through a unique interface created by the arbitrator or the electronic arbitration center, it is simple to submit data and receive arbitrators-signed awards.
8- The existence of a global pact pertaining to the acceptance and implementation of arbitral rulings It is depicted in: Convention of 1948-1958 AD in New York on the Recognition and Enforcement of Arbitral Awards This contrasts with court decisions because, while regional and bilateral agreements exist to implement it, there is currently no agreement governing international recognition and implementation, such as the New York Convention.(Mansour, p. 482).
9- Speed of issuing the arbitration award: This is achieved due to the ease of electronic arbitration procedures, which are completed by submitting documents via email. It is also possible to directly contact and dialogue with experts and technicians via the Internet.
10- Reducing the costs of electronic arbitration:Due to the fact that neither the parties, witnesses, nor arbitrators must travel across national borders, electronic arbitration is distinguished by its low costs. In line with the size of e-commerce contracts, this eliminates the need for hotel stays, airfare, and court and expert fees. (Bilal Abdul Muttalib, 2006, p. 95).

From the foregoing, it is evident that the electronic arbitration system in international business transactions offers numerous benefits that benefit the two parties to the contract, or parties to it, in the event that a disagreement emerges between them. The most notable of these benefits are the ease of the arbitration process, the speed at which the dispute

is settled, the speed at which the arbitration award is issued, and the lower costs of electronic arbitration, all of which contribute to the maintenance of cordial relations and the continuation of business dealings between them.

2. Electronic Arbitration Award

The electronic arbitration award is considered one of the most prominent issues that establishes the legitimacy of electronic arbitration, as it represents the fruit of the agreement and the procedures of the arbitration process as a whole for the parties involved in arbitration on one hand, and a part of the state's authorities and sovereignty represented in the judiciary on the other hand.

The electronic arbitration award raises numerous questions not only regarding its form but also concerning its implementation. Should we consider the arbitration award valid if it is issued in electronic form? Consequently, is this award enforceable by the national courts in the state where enforcement is sought? In light of the fact that most Arab arbitration laws do not regulate electronic arbitration awards, and to answer these questions and others, as well as to understand the nature of the arbitration award, how it is issued, and how to challenge it, we will divide this section into two demands: the first will address the nature of the arbitration award, and the second will discuss the effects of the arbitration award.

2. 1. What is the electronic arbitration ruling?

The definition of an electronic arbitration award is no different from the definition of an arbitration award in general, as the electronic arbitration award is made over the Internet, a medium limited by international agreements and protocols for the exchange of documents and information. Therefore, an arbitration award refers to all decisions issued by the arbitral tribunal over communications networks, whether final, interim, or partial, without the need for the physical presence of the arbitral tribunal members in one location..

2. 1. 1 Issuance of the arbitration award

An electronic arbitration award means: (all decisions issued by the arbitration panel via communication networks such as the Internet, whether final, interim, preliminary or partial decisions, without the need for the physical presence of the arbitration panel members in one place). The electronic arbitration award represents the fruit of the arbitration process from beginning to end, and it is what determines the extent of the legitimacy of the arbitration. Issuing the award is the most important stage of the arbitration process, and a question arises as to whether the electronic arbitration award has a special form that differs from issuing a traditional arbitration award(Salawi& Lamia, 2025, p. 1180).However, Most texts that require writing do not stipulate a specific form for their formulation or method of recording. They may be handwritten or electronically. Therefore, issuing a ruling in electronic writing fulfills the form requirement required by national legislation and international agreements. The electronic arbitration award data is distinguished by the fact that it is written electronically and signed electronically, which is what the nature of this type of arbitration allows, as it was permitted by the Model Law on Electronic Signatures of 2001(United Nations, 2001, Art. 6(1)).As well as the United Nations Convention on the Use of Electronic Communications in International Contracts of 2005 (United Nations, 2005, Art. 9),However, the electronic arbitration award and all paper documents must be extractable on paper so that they can be submitted to the courts for confirmation and enforcement of the electronic award, making it binding.

With regard to signing the award, Article 30 of the Model Law on International Commercial Arbitration stipulates that the arbitration award must be issued in writing. Article (31) of the same law stipulates that the arbitrator and arbitrators, if there are multiple arbitrators, must sign the arbitration award. This is the practice in ordinary arbitration, where the arbitrators sign the award by hand, but handwriting is not available in electronic arbitration. Therefore, some have suggested - to address the problem of the absence of handwritten signatures by the arbitrators - sending a printed copy of the award to the members of the arbitration committee for signature.

2. 1. 2Completion of electronic arbitration procedures

Following an email interaction between arbitrators (if there are numerous arbitrators) and deliberations, which are frequently performed via videoconference, the electronic arbitration award is issued. However, does the arbitrator's or the arbitration panel's function cease after the arbitration award is issued? Before rendering a final decision regarding the dispute, is there anything the arbitration panel can do to prepare? It is undeniable that the arbitration panel's responsibilities continue after the arbitration award is issued. Instead, in cases when the award is unclear, lacking, or may need explanation—discussed in turn—the panel maintains part of its authority in the dispute.. (Bin Saeed, 2010, p. 234)Laws vary in their requirement for the reasons for an arbitration award, but most stipulate that "the arbitral tribunal must provide reasons for its decision unless the parties agree not to provide reasons."

We can infer from this requirement that the arbitration decision is issued after the trial is resolved and the procedures are completed unless exceptional circumstances arise that prevent this, with clarification to the individuals if any, and it is required that the decision be issued in writing, and a majority is sufficient for its issuance with the signature of the president and members with mention of the opinion of the dissenting member if the ruling is not unanimous, and a summary of the statements of thetoruleTheir documents, the reasons for the ruling, its operative part, the place where it was issued, and the date of its issuance..

2. 2. Effects of electronic arbitration

The issuance of an electronic arbitration award entails some effects, the most important of which is the enforceability of that award immediately upon its issuance, and at the same time the ability to be preserved in confirmation of the principle of confidentiality - which is considered the basis for resorting to electronic arbitration - therefore it is necessary to address the validity of the electronic arbitration award and the extent of its ability to be appealed in the first paragraph, and its implementation..

2. 2. 1. The validity of electronic arbitration and its appeal

Most legislations recognize the res judicata effect of arbitration awards. Regarding electronic arbitration, the situation is not much different, as paragraph 25 of the Space Court Regulations states that arbitration is considered final and cannot be appealed. Paragraph 6 of the aforementioned article stipulates that the parties' agreement to submit the dispute to arbitration in accordance with the Space Court Regulations constitutes a waiver of their right to appeal the award by any means. This ruling is consistent with the system of the virtual judge, unlike the system of the Space Arbitration Court, which allows for the appeal of its rulings before the competent court for appeals against judgments issued by first-instance courts. Therefore, the parties cannot request the enforcement of the award until it becomes final, either by the expiration of the appeal deadlines or by the rejection of the appeal.

Some scholars argue that the arbitration award takes effect from the date specified for issuing the arbitration decision. In contrast, others believe that the res judicata effect of the award is not absolute, although the arbitration award enjoys this effect, indicating that the scope of this effect is determined by the scope of the arbitration agreement. Thus, the award has res judicata effect only within the limits of the issues addressed in the arbitration agreement.

As for the legislative aspect, many legislations have recognized the authority of the res judicata of arbitration awards. Article 55 of the Egyptian Arbitration Law No. 27 of 1994 states that "the awards of arbitrators issued in accordance with this law shall have the authority of res judicata and shall be enforceable in accordance with the provisions set forth in this law." Similarly, the Jordanian Arbitration Law No. 31 of 2001 stipulates in Article 52 that "the awards of arbitrators issued in accordance with this law shall have the authority of res judicata and shall be enforceable in accordance with the provisions set forth therein." Thus, the Jordanian legislator has followed the Egyptian legislator regarding the authority of res judicata for electronic arbitration awards. In Algerian legislation, electronic arbitration awards also have the same legal authority as traditional arbitration, provided that they meet the legal requirements. One of the most important effects of an arbitration award is that it acquires the authority of res judicata, as the arbitration award, once issued, immediately possesses this authority in the dispute that has been definitively resolved, even though it is subject to appeal

by one of the means such as a review. The authority means that the ruling does not become final; it is a temporary authority that ceases if the ruling is annulled and is confirmed if it becomes final (Terki, 1999, p. 125)

2. 2. 2Enforcement and preservation of electronic arbitration awards

Firstly. Enforcement of electronic arbitration award:(New York Convention, 1985)

International enforcement of arbitration awards is based on international agreements, such as the New York Convention of 1958, the European Convention on International Commercial Arbitration of 1961, the Washington Convention of 1965, and the Model Law on International Commercial Arbitration of 1985.

secondly. Procedures for implementing the judgment:(Geneva Agreement, 1961)

1. Filing the arbitration award with the court clerk of the competent court.

2. Expiration of the period for filing a nullity action against the arbitration award.

3. Obtaining an order to enforce the arbitration award.

4. Submitting a petition to the competent judge to issue the enforcement order.

5. Attaching the necessary documents for the enforcement process (original award, a copy of the arbitration agreement, a copy of the documents indicating the filing of the arbitration award with the court clerk).

6. Providing evidence of the accuracy of the information contained in the (award and agreement) if they are electronically signed.

In conclusion, we would like to point out that electronic arbitration, which has recently emerged and is still in the process of legal and technical updating and regulation, still requires intervention from international organizations and countries to establish a comprehensive framework that ensures the recognition and regulation of this new type of arbitration.

Conclusion:

Based on the above, we can say that the resort of contractors to electronic arbitration, as an unusual alternative means of resolving e-commerce disputes, is aimed at settling the disagreements that arise between them regarding the implementation of international electronic trade contracts. We presented the nature of e-commerce, its characteristics, the concept of electronic arbitration, its emergence, and scope of application, as well as how to resort to electronic arbitration and its selection by the disputing parties as an alternative to international courts, due to its ease, low cost, and other advantages. We reviewed how to complete the electronic arbitration agreement, its forms, electronic arbitration procedures, and how the arbitration process proceeds, leading to the goal of resorting to arbitration and choosing an arbitration center or body, which is to reach and obtain the issuance of the electronic arbitration award, its enforceability, and ways to appeal it before executing this award issued by the civil arbitrator or the arbitration court, without delay or procrastination. However, the losing party may be acting in bad faith and refuse to implement the award, which forces the benefiting party to resort to the national judiciary of the state with jurisdiction over enforcement, to request the execution of this award. Since the issued award may not be satisfactory to one of the parties, what is the solution in the face of its obstinacy or non-compliance with the arbitration decision, especially since the electronic arbitration award may not be binding? Given that electronic arbitration is a hybrid system that cannot be divorced from its traditional origin; the principle is that the electronic award should be executed by the same mechanism used for executing traditional arbitration awards, if possible. Due to various considerations that make it difficult to follow the same previous mechanism, it may be implemented in ways that align with the peculiarities of the virtual world without the need to

follow the procedures for enforcing foreign arbitration awards, provided that the arbitration award is deposited with the court clerk of the court where the competent judge for its enforcement is located in order to obtain the judgment in the form of an enforcement order. In the case of determining the place of arbitration, the electronic judgment has its own nationality, similar to regular arbitration awards. We can categorize arbitration awards in terms of enforcement into two types: enforcement in the country of issuance of the arbitration award, which is subject to the procedures for enforcing regular judgments and is considered like any local arbitrator, and enforcement and recognition in foreign countries, which is subject to the 1958 New York Convention, the provisions of which also apply to electronic arbitration awards.

In conclusion, we can say that electronic arbitration is still in the process of modernization and legal regulation, and it still requires intervention from countries and international organizations to establish a comprehensive framework that ensures the universality of recognition and regulation of this new type of arbitration, which is an effective system that provides many advantages not offered by traditional arbitration. The only barriers to its development and effectiveness are the lack of a specific international legal framework for it, in addition to the approval of national legislations regarding electronic transactions, especially concerning the specifics of electronic arbitration.

Results:

1. Electronic arbitration is a means of resolving disputes that arise in an electronic environment, and the intention to resort to it, raise the dispute, and conduct the proceedings until the issuance of the ruling and its notification is all done electronically.

2. Electronic arbitration is conducted using electronic means at all stages of resolving international commercial contract disputes from the beginning until the issuance of the arbitration ruling.

3. The electronic arbitration agreement does not differ much from the traditional arbitration agreement regarding substantive conditions, as much as it differs in the fulfillment of formal conditions, which are represented in that writing and signature are done electronically.

4. Electronic arbitration is the best means for resolving many disputes, including those related to intellectual property and disputes arising from electronic actions in general and e-commerce in particular.

5. The inability of arbitration laws, especially the Arab ones, to keep pace with the advancements brought about by the communications revolution and its implications on the nature of contracting and the non-material contexts used in it.

6. A reconsideration of some national legislations and an attempt to amend them to align with international agreements concerning electronic international trade contracts and electronic arbitration.

Suggestions:

1. A reconsideration of some national legislations and an attempt to amend them to align with international agreements concerning electronic international trade contracts and electronic arbitration.

2. The necessity of holding seminars and legal sessions to raise awareness of the role and importance of electronic arbitration across all academic and governmental axes.

3. Conducting training courses for specialized human resources "arbitrators" in the electronic arbitration system.

4. The necessity for national laws to recognize the validity of electronic arbitration sessions and to accept the evidence presented therein and the defenses raised.

5. The necessity of reaching a mechanism that provides legal security for transactions conducted via the internet.

6. Finding a legal legislative solution that permits resorting to electronic arbitration if this solution is more suitable for the consumer.

7. Engaging in global and regional agreements for international commercial arbitration.

Reference

1. Abu Al-Wafa, A. (2007). *Arbitration contract and its procedures*. University Publications House.
2. Al-Najjar, K. M. Z. (2009). International commercial arbitration (A comparative study). Dar Al-Fikr Publishing.
3. Al-Rumi, M. A. (n.d.). [Previous reference].
4. Al-SayyidFaragSaad, M. (2024). E-commerce contracts: Present, future, and impact on the local and global economy. Journal of Jurisprudential and Legal Research, Faculty of Sharia and Law, Damanhour, Al-Azhar University, Egypt, (47), 7.
5. Bariri, M. A. M. (2004). International commercial arbitration. Dar Al Nahda Al Arabiya.
6. Bin Saeed, L. (2010). The legal system of e-commerce contracts. Dar Al Fikr Al Jami'i.
7. Bin Saeed, L. (n.d.). [Previous reference].
8. Bilal Abdul Muttalib, B. (2006). Electronic arbitration for settling electronic commerce disputes. Dar Al Nahda Al Arabiya.
9. CHATILLON, S. (2007). The contra international. LibrairieVibert.
10. Geneva Agreement on International Commercial Arbitration. (1961).
11. Juman, N. N. M. (2008). The arbitration clause in commercial contracts: A comparative study. Modern University Office.
12. Khadrawi, O. (2014). Arbitration laws in Arab countries. Dar Al-Wafa Legal.
13. Mansour, M. H. (2009). International contracts. Dar Al-Jamia Al-Jadida.
14. Mansour, M. H. (n.d.). [Same reference].
15. MukhtarBariri, M. A. (2004). International commercial arbitration. Dar Al Nahda Al Arabiya.
16. New York Convention on the Enforcement of Arbitral Awards. (1985).
17. Robert, J. (1993). Droit international, droit international privé. Dalloz.
18. Salama, A. A. K. (n.d.). Arbitration in domestic and international financial transactions: A comparative study. Dar Al Nahda Al Arabiya.

19. Salawi, Y., & Lamia, Y. (2025). Flexibility of electronic arbitration in resolving e-commerce disputes. Academic Journal of Legal and Political Research, Faculty of Law and Political Science, Amar Theliji, Laghouat University, 9(1), 1170–1180.

20. Suleiman, M. (2011). Electronic arbitration. Dar Al-Jamia Al-Jadida.

21. Terki, N. (1999). International commercial marketing in Algeria. OPU.

22. United Nations. (2001). Model Law on Electronic Signatures. Article 6(1).

23. United Nations. (2005). United Nations Convention on the Use of Electronic Communications in International Contracts. Article 9.

24. Zaazoua, F., &Zaazoua, N. (2022). Electronic arbitration as a mechanism for settling e-commerce disputes under Algerian legislation. Journal of Algerian Public and Comparative Law, Faculty of Law and Political Science, University of SidiBel Abbes, 8(1), 144–.

RESEARCH ARTICLE

Administrative Oversight of Product Compliance as a Mechanism for Consumer Protection in Algerian Legislation

Karima Yahiaoui
Dr.
University Kasdi Merbah Ouargla
Algeria
Email: Yahiaoui.karima@univ-ouargla.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Compliance obligation, administrative oversight, consumer protection, domestic products, imported products.

Abstract
The issue of administrative oversight of product compliance constitutes one of the principal mechanisms adopted by the Algerian legislature to ensure consumer protection. To elucidate this oversight, this paper first examines the administrative supervision of domestic products within the market through a review of inspection procedures, such as document examination, hearing from stakeholders, entry into commercial premises, direct inspection and sampling, which culminates in the drafting of violation reports. It also addresses the administrative authority's powers to implement appropriate precautionary measures, including storage, seizure, temporary or permanent withdrawal, destruction, and temporary suspension of activity. The second part of the study focuses on the administrative oversight of imported products at border points, highlighting the role of specialised regulatory bodies and the procedures followed, as well as the precautionary measures applicable, such as conditional authorisation of entry or outright refusal of entry in cases of noncompliance with legal and regulatory standards.

Citation. Yahiaoui K. (2025). Administrative Oversight of Product Compliance as a Mechanism for Consumer Protection in Algerian Legislation. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 90–107. https://doi.org/10.56352/sei/8.11.8

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.02.2025 | Accepted: 01.07.2025 | Published: 27.08.2025 (available online)

Introduction:

Administrative oversight of product compliance has been accorded particular importance under the provisions of Law No. 09--03 on consumer protection and fraud prevention (as amended and supplemented). This is due to the pivotal role that product compliance plays as a mechanism for consumer protection, especially as the concept of compliance has expanded to encompass a product's conformity with technical regulations and requirements related to health, safety, security, and the environment.[1]

This is evident from the provisions of Law No. 09--03 on Consumer Protection and Fraud Prevention (as amended and supplemented), which dedicates Chapter II of Title III to procedures for monitoring product compliance. Under Article 29 of this law, these monitoring procedures are entrusted to the officers referred to in Article 25 of the same statute.

[1] Ayad, Mohamed Imad Eddine, "The Consumer Contract in Algerian Legislation" (unpublished PhD thesis, Faculty of Law and Political Science, University of Blida 2, 2016), 397.

Notably, the officers referred to in Article 25, who are authorised to exercise administrative oversight in this context, are of three categories: judicial police officers,[2] officers authorised pursuant to specific statutory provisions,[3] and fraud prevention officers[4] attached to the ministry responsible for consumer protection.

Moreover, the legislature did not limit itself to merely authorising these officers to perform monitoring duties; instead, it granted them powers to facilitate the exercise of such oversight. Article 29 of Law No. 09-03 demonstrates that the legislature has vested these officers with extensive powers, granting them discretion regarding the means employed and the timing of measures taken at all stages of the process of offering products for consumption to ensure effective monitoring of product compliance.

On this basis, the central question arises: How can administrative oversight of product compliance, as a mechanism for enforcing the obligation of compliance, ensure the effective implementation of this obligation in a manner that guarantees consumer protection?

To address this question, the study has been structured according to a bipartite plan as follows:

- **First section:** Administrative oversight of domestic product compliance at the market level.
- **Second section:** Administrative oversight of imported product compliance at border points.

Section One: Administrative Oversight of Domestic Product Compliance at the Market Level

In the context of exercising administrative control to ensure the enforcement of the obligation of product compliance, regulatory officers, each according to their area of expertise, carry out procedures to identify products available on the market. These procedures enable officers to take measures that fall within the scope of administrative powers in supervisory operations.

This necessitates an examination of two key issues. The first concerns the need to understand the procedures employed in the administrative oversight of product compliance at the market level (First), whereas the second relates to understanding the administrative authority's powers in adopting precautionary measures concerning domestic products (Second).

First: Administrative Oversight Procedures Related to Product Compliance at the Market Level

An analysis of the provisions of Law No. 09--03 on Consumer Protection and Fraud Prevention reveals that the Algerian legislature has granted the authority to exercise administrative oversight of domestic product compliance at the market level to specific bodies, namely, fraud prevention officers. These officers are vested with powers to carry out direct supervisory duties at the market level. Such oversight is conducted through a series of procedures about product compliance at the market level, which will be outlined in detail in the following sections.

1. Examination of Documents and Hearings of Relevant Stakeholders

[2] See Article 15, which defines who holds the status of judicial police officer, in Ordinance No. 66-155 of 8 June 1966, Code of Criminal Procedure, as amended and supplemented by Ordinance No. 21-11 of 25 August 2021, Official Gazette No. 65 of 26 August 2021.

[3] These include customs officers and veterinary officers. See Zahia Houria Si Youssef, *Study of Law No. 09-03 of 25 February 2009 on Algerian Consumer Protection* (Algiers: Houma Printing, Publishing, and Distribution, 2017), 73.

[4] The Fraud Prevention Division includes the following ranks: Fraud Prevention Controllers (to be phased out), Fraud Prevention Investigators, and Fraud Prevention Inspectors. See Article 4 of Executive Decree No. 09-415 of 16 December 2009 Establishing the Special Statute Governing Employees in the Special Ranks of the Administration in Charge of Commerce, Official Gazette No. 75 of 20 December 2009.

Oversight of product compliance with specific distinguishing requirements is carried out through the examination of documents or by hearing relevant stakeholders.[5] The officers perform this procedure referred to in Article 25 of Law No. 09--03 on Consumer Protection and Fraud Prevention (as amended and supplemented), regardless of their designation, whether they are judicial police officers, officers authorised under special statutory provisions, or fraud prevention officers under the ministry responsible for consumer protection. In the course of their supervisory duties, and without the restriction of professional secrecy being invoked against them, these officers are empowered to view and examine all papers or technical, administrative, commercial, financial, or accounting documents, as well as all magnetic or digital media. In addition, they may request access to any of the aforementioned documents, regardless of whose possession they are in, and may proceed to seize them.[6]

Notably, the procurement of such documents and records by the aforementioned officers may also take place even in the absence of relevant stakeholders or their legal representatives. In such cases, access may be obtained through any employee who holds these documents by virtue of their position, and neither the absence of the stakeholder nor their legal representative may be invoked to prevent the officers from reviewing the documents.[7]

For hearing the relevant stakeholders and their employees, this procedure serves to obtain all the information that facilitates the proper execution of the supervisory task, particularly in cases where documents are refused, unavailable on the premises, or withheld under the pretext of the absence of the shop owner or the company's manager.[8]

Entry into Commercial Premises

In addition to the aforementioned procedure, the legislature authorised the officers referred to above, within the framework of exercising oversight of product compliance, to enter commercial establishments, offices, annexes, and loading and storage facilities, with the freedom to do so either by day or by night. Such access may generally be exercised in any location.

However, this broad authorisation does not extend to premises used for residential purposes, which may only be entered in accordance with the provisions of the Code of Criminal Procedure.[9] Article 29 of Law No. 09-03 grants supervisory officers extensive and unrestricted powers with respect to product monitoring regarding the means employed (by any means), the timing (at any time), and the scope (at all stages of the process of offering products for consumption). Conversely, Article 34 places limits on the authority of supervisory officers when it concerns premises used for residential purposes, stipulating that entry shall be carried out in accordance with the Code of Criminal Procedure.[10] The latter provides that the inspection or search of dwellings may not commence before five:00 in the morning or after eight:00 in the evening, except in specific circumstances or under legally defined exceptional conditions.[11]

The legislature has exempted premises of a residential nature from unrestricted access, adhering to the provisions of the Code of Criminal Procedure. However, it has not required supervisory officers to obtain and present a written

[5] See Articles 29 and 30 of Law No. 09-03 of 25 February 2009 on Consumer Protection and Fraud Prevention, *Official Gazette* No. 15 (8 March 2009), as amended and supplemented by Law No. 18-09 of 10 June 2018, *Official Gazette* No. 35 (13 June 2018).
[6] See Articles 33 and 30 of Law No. 09-03.
[7] André Marie, "Les enquêtes de la DGCCRF en matière de pratiques anticoncurrentielles," *Revue LAMY de la concurrence*, no. 14 (January–March 2008): 115.
[8] *Guide de l'Inspecteur de la Répression des Fraudes*, Direction Générale du Contrôle Économique et de la Répression des Fraudes, Ministère du Commerce, 14.
[9] See Article 34 of Law No. 09-03.
[10] Mohamed Imad Eddine Ayad, *The Consumer Contract in Algerian Legislation* (previously cited), 398.
[11] See Article 47 of Ordinance No. 66-155, Code of Criminal Procedure, as amended and supplemented.

authorisation.[12] Issued by a specific authority prior to entering and commencing their oversight activities. The rationale behind this, from our perspective, lies in recognising the unique nature of the duties performed by supervisory officers and in facilitating their work procedures. For this reason, the legislature did not require written authorisation so as not to hinder their performance of duties and to ensure that their work is carried out with ease.

3. Direct On-Site Inspections by Visual Observation or Measuring Instruments

In addition to the preceding measures, the legislature has authorised the aforementioned officers to conduct direct inspections, either through visual observation or with the aid of measuring instruments. Direct inspections refer to procedures aimed at detecting violations that can be established through visual examination of products or observation of services offered for consumption or by using simple measuring devices or instruments, which allow for the immediate detection of infringements without the need for in-depth analysis.[13]

However, in their efforts to carry out direct inspections through visual observation, the officers referred to in Article 25 of Law No. 09--03 aim to uncover violations that may take multiple forms. Examples include the absence of product labelling, the failure of products to bear the conformity mark "MJ," denoting Algerian conformity, and other infractions that can be detected visually without requiring specialised expertise or advanced qualifications. Nonetheless, this does not mean that direct visual inspection alone can always ensure the full effectiveness of this procedure. In many cases, officers are unable to detect certain violations related to product compliance solely by visual observation, which necessitates the adoption of another measure: the collection of samples for analysis, testing, or examination. This will be addressed in the following section.

4. Collection of Samples for Analysis, Testing, or Examination

The collection of samples constitutes a purely administrative procedure,[14] as stipulated among the oversight measures on product compliance within the provisions of Law No. 09--03 on Consumer Protection and Fraud Prevention.

This procedure applies to products that may be subject to suspicion, those for which documentary and visual inspections have proven insufficient, or in cases where doubts arise regarding the accuracy of the information provided to supervisory authorities or officers.[15] Consequently, supervisory officers resort to the collection of samples for analysis, testing, or examination to ensure thorough oversight of product compliance.

How do supervisory officers collect samples?

The process of sample collection for analysis is carried out by the supervisory officer, who selects three homogeneous and identical samples of the product under inspection, which are then sealed. The first sample is sent to an authorised laboratory.[16] Specifically, laboratories under the ministry are responsible for consumer protection and fraud prevention, although other laboratories may also be accredited to conduct these analyses.[17]

---

[12] As in Article 44 of the Code of Criminal Procedure, which requires written authorisation issued by the Public Prosecutor or the Investigating Judge to be presented prior to entering a residence and commencing a search.
[13] Salwa Gaddach, *The Obligation to Guarantee Products in Consumer Contracts* (PhD diss., Faculty of Law and Political Science, Department of Law, University of Batna 1, 2018–2019), 238.
[14] Mohamed Boudali, *Consumer Protection in Comparative Law: A Comparative Study of French Law* (Cairo: Dar Al-Kitab Al-Hadith, 2006), 292.
[15] *Guide de Contrôle des Appareils Électroménagers*, Direction Générale du Contrôle Économique et de la Répression des Fraudes, Ministère du Commerce, 16.
[16] See Article 40 of Law No. 09-03.
[17] See Articles 35 and 36 of the same law.

The second and third samples serve as control samples: one is retained by the supervisory authority that carried out the collection, while the relevant stakeholder remains the third. Both samples may be used if an expert examination is needed, provided that they are stored under appropriate conditions to prevent any alteration or damage.[18]

However, in the course of their duties, supervisory officers may encounter products whose nature does not permit the collection of the three aforementioned samples. In such cases where the product under inspection is perishable or its nature, quantity, weight, size, or value precludes the standard sampling procedure, a single sample is collected, sealed, and sent immediately to an authorised laboratory for analysis.[19]

Nevertheless, granting supervisory officers the discretion to collect only one sample may, in our view, constitute an infringement and violation of the stakeholders' rights in the context of exercising oversight and ensuring consumer protection. In such circumstances, the stakeholder is deprived of the right to retain a sample for possible expert review, and even the second sample, which would serve as a control, is unavailable. Thus, while product compliance monitoring procedures are designed to safeguard consumers, this objective should not justify disregarding the rights of defence of those subject to inspection.

5. Drafting Violation Reports Following Oversight Procedures

A report may be defined as a written document prepared by a duly authorised official, recording an incident in which the drafter has personally verified and investigated within the scope of their jurisdiction.[20]

Hence, the legislature, through Law No. 09--03 on Consumer Protection and Fraud Prevention, stipulates that supervisory officers, in the course of performing their oversight duties, must draft reports documenting all necessary information. These include the dates and locations of inspections conducted, a detailed account of the facts observed, the recorded violations, and the penalties prescribed for them. Furthermore, such reports must specify the identities and official capacities of the officers conducting the inspection, along with the name, surname, activity, and address of the stakeholder subject to oversight.[21]

This reporting procedure, as set out within the measures for product compliance monitoring, raises the question of the legal probative force of reports prepared by fraud prevention officers. The answer to this query is explicitly provided in Paragraph 3 of Article 31 of Law No. 09--03, which states: "The reports referred to in the preceding paragraphs shall carry legal probative force until proven otherwise."

This legal probative force accorded to reports prepared by fraud prevention officers constitutes a privilege granted by the legislature specifically to this category of reports to establish offences affecting consumer protection. This stands in contrast to the general procedural rules outlined in the Code of Criminal Procedure, under which reports drafted in felony and misdemeanour cases are generally regarded as mere pieces of evidence that the judge may choose to rely upon or disregard. Consequently, a stakeholder's denial of the facts attributed to them in such reports, even when accompanied by contrary evidence, is insufficient to invalidate their contents.[22]

Second: Administrative Powers to Take Precautionary Measures Regarding Domestic Products

Within the provisions of the Law on Consumer Protection and Fraud Prevention, the Algerian legislature not only vested supervisory officers with powers to carry out procedures in the course of their oversight duties but also grant-

[18] See paragraphs 2, 3, and 4 of Article 40 of the same law.
[19] See Article 41 of the same law.
[20] Ahmed Khadidji, *Rules of Commercial Practices in Algerian Law* (PhD diss., Faculty of Law and Political Science, University of Hadj Lakhdar Batna, defended 12 May 2016), 277.
[21] See Article 31 of Law No. 09-03.
[22] Salwa Gaddach, *The Obligation to Guarantee Products in Consumer Contracts* (previously cited), 243.

ed broader powers to the administration, through these officers, to adopt precautionary measures concerning domestic products at the market level. This section seeks to set out the principal precautionary measures available to supervisory officers to ensure compliance monitoring of products offered for consumption.

1. Product Deposits

The deposit of products constitutes a new measure not addressed by the Algerian legislature under the provisions of repealed Law No. 89--02 on consumer protection. The measure was introduced and regulated under Chapter I of Title IV of Law No. 09--03 on Consumer Protection and Fraud Prevention, which addresses precautionary measures and the principle of precaution.

A deposit consists of suspending a product offered for consumption that has been verified and found, upon direct inspection, to be noncompliant. A decision of the authority responsible for consumer protection and fraud prevention is carried out. The deposit measure is intended to ensure the compliance of products suspected of nonconformity by the stakeholder concerned. If, following inspection, the product is found to be compliant, the competent authority issues a decision lifting the deposit. In cases of noncompliance, the stakeholder may be formally notified to take appropriate corrective measures to eliminate the cause of nonconformity or to address violations of the rules and standards governing the offering of products for consumption.[23]

2. Product Seizures

As part of the precautionary measures undertaken by supervisory officers to ensure consumer protection, officers may proceed with the seizure of a product.[24] Seizures are carried out when product compliance cannot be verified or when the relevant stakeholder refuses to undergo the compliance verification process for a product suspected of nonconformity.

Seized products may then be redirected, either by being sent to a public-interest institution for direct and legitimate use, repurposed and redirected for lawful use after modification, or destroyed. These actions are accompanied by judicial proceedings as prescribed by the provisions of the Law on Consumer Protection and Fraud Prevention.[25]

Certain noncompliant but consumable goods have been redirected to public interest centers, such as the Red Crescent, solidarity centers, charitable restaurants, the Ihsan Association, the Orphan Care Association, hospitals, the National Center for Women in Difficult Situations, centers for assisted children, psycho-pedagogical centers for children with disabilities, homes for elderly individuals, and rehabilitation institutions.

Noncompliant meat has been directed to stray dog shelters, animal quarantine facilities, dog training and rehabilitation centers, and zoological parks. In this context, immediate notification of the Public Prosecutor is required in all cases of destruction, redirection, or repurposing of products.[26]

3. Temporary Withdrawal of Products

In carrying out their duties related to product compliance and in applying precautionary measures to ensure consumer protection, supervisory officers may impose the temporary withdrawal of a product.[27]

[23] See Articles 55 and 56 of Law No. 09-03.
[24] See Article 53 of Law No. 09-03, as amended by Article 2 of Law No. 18-09.
[25] See Articles 57 and 58 of Law No. 09-03.
[26] *Guide de l'Inspecteur de la Répression des Fraudes*, Direction Générale du Contrôle Économique et de la Répression des Fraudes, Ministère du Commerce, 20.

Temporary withdrawal consists of prohibiting the placement of any product for consumption, wherever it may be found, when there is suspicion of its noncompliance. This measure remains in effect pending the outcome of in-depth investigations, particularly laboratory analyses.[28] It involves the collection of samples for testing, experimentation, or verification or for obtaining documents or information not available to the holder of the product subject to inspection.[29]

Supervisory officers draw official reports, seal suspected products, and place them under the custody of the stakeholders concerned.[30]

The legislature, in turn, has stipulated that such investigations must be conducted within seven working days. If no noncompliance is proven, the temporary withdrawal is to be lifted immediately. The seven days may be extended where the technical conditions for oversight, testing, or experimentation require additional time. Should noncompliance be confirmed, the product is declared seized, and the public prosecutor must be notified without delay.[31]

By virtue of Law No. 18--09, the legislature introduced Article 61 bis, which had not been included in Law No. 09--03, providing that fraud prevention officers may also impose temporary withdrawal in cases where products are suspected of being counterfeit.

Thus, fraud prevention officers are now authorised to implement temporary withdrawal of products in two situations: first, where there is suspicion of noncompliance, and second, where products are suspected of being counterfeit.

Furthermore, Executive Decree No. 12--203, concerning the rules applicable in the field of product safety, affirms this provision. Article 15 of the decree stipulates that, at all stages of placing products for consumption, the authority responsible for consumer protection and fraud prevention should take all necessary measures to withdraw goods from the market or suspend services if they do not meet safety requirements. This is to be carried out particularly through issuing clearly worded warnings to the relevant stakeholders, indicating the risks posed by the products placed on the market and obliging the stakeholders to bring the goods into conformity.

4. Permanent Withdrawal of Products

Permanent withdrawal of products is carried out by supervisory officers without prior authorisation from the competent judicial authority in the following cases:

- Products proven to be counterfeit, fraudulent, toxic, or past their expiration date.
- Products found and confirmed to be unfit for consumption.
- Possession by a stakeholder of products without legitimate justification may be used for counterfeiting.
- Counterfeit products.
- Objects or devices used to commit acts of counterfeiting.

[27] See paragraph 2 of Article 53 of Law No. 09-03, as amended by Article 2 of Law No. 18-09 on Consumer Protection and Fraud Prevention.
[28] See Article 59 of Law No. 09-03.
[29] *Guide de l'Inspecteur de la Répression des Fraudes*, previously cited, 17.
[30] See Article 61 of Law No. 09-03.
[31] See Article 59 of the same law.

In all of the above cases, the Public Prosecutor must be notified immediately.[32]

It is thus evident that the legislature, through the provisions of the Consumer Protection Law, has empowered supervisory officers to intervene immediately without the need for prior authorisation from competent judicial authorities. This measure aims to ensure prompt action and to avoid placing obstacles in the way officers perform their duties, particularly in all the aforementioned cases, most of which concern counterfeit, fraudulent, or expired products.

5. Destruction of Products

Where it is impossible to find a lawful or economically viable use for seized or permanently withdrawn products, destruction is employed. This procedure involves applying a specific method to eliminate the product permanently. Examples include burning goods, burying them underground, chemically decomposing them, or employing other scientifically recognised methods of destruction carried out by supervisory officers in this context.[33]

Accordingly, the decision to destroy any noncompliant product, whether seized or permanently withdrawn, is made by supervisory officers.[34] In fulfilling their mandate to protect consumers, all precautionary measures, including the destruction of products, should be implemented. The order for destruction may be issued by either of two authorities: the body responsible for consumer protection and fraud prevention or the competent judicial authority. This measure must be carried out in the presence of supervisory officers and executed by the stakeholder concerned.

Destruction may also be performed by altering the nature of the product.

A destruction report must be drawn up by supervisory officers and signed by the stakeholder concerned.[35] The Public Prosecutor must be notified immediately, and the territorially competent Public Prosecutor must be informed without delay in cases where the operator refuses to comply with the destruction order for the product in question.[36]

6. Temporary Suspension of Business Activities or Administrative Closure of Commercial Premises

The temporary suspension of business activities is one of the precautionary measures that supervisory officers may adopt in the course of exercising their duties related to product compliance. This measure is provided for under Article 53 of Law No. 09--03 on Consumer Protection and Fraud Prevention. However, through Law No. 18--09, the legislature amended the aforementioned article to introduce an additional precautionary measure, namely, the administrative closure of commercial premises.[37]

In accordance with the provisions of the Consumer Protection and Fraud Prevention Law, consumer protection and fraud prevention authorities may impose a temporary suspension of business activities or an administrative closure of commercial premises for a period not exceeding fifteen days. This period may be renewed in cases where noncompliance with the rules established under the Consumer Protection and Fraud Prevention Law is confirmed and the measure shall remain in effect until all causes that led to the imposition of the temporary suspension of business activities or administrative closure of commercial premises have been fully remedied.[38]

---

[32] See Article 62 of Law No. 09-03.
[33] Salwa Gaddach, *The Obligation to Guarantee Products in Consumer Contracts* (previously cited), 249.
[34] *Guide de l'Inspecteur de la Répression des Fraudes*, previously cited, 20.
[35] See Article 64 of Law No. 09-03.
[36] *Guide de l'Inspecteur de la Répression des Fraudes*, previously cited, 20–21.
[37] The Algerian legislature also provided for the administrative closure of commercial premises in Article 46 of Law No. 04-02 of 23 June 2004, Establishing the Rules Applicable to Commercial Practices, *Official Gazette* No. 41 (27 June 2004), as amended and supplemented by Law No. 10-06 of 15 August 2010, *Official Gazette* No. 46 (18 August 2010).
[38] See Article 65 of Law No. 09-03, as amended by Article 3 of Law No. 18-09.

Following the presentation of the administrative authority's full range of precautionary powers concerning domestic products, it is necessary to address, in conclusion, the issue of expenses arising from the precautionary measures outlined above.

Under Article 60 of Law No. 09--03, prior to its amendment, the legislature distinguished between two scenarios concerning the payment of expenses:

- The first concerns cases where noncompliance is established. In such instances, the negligent stakeholder is required to bear the costs resulting from oversight operations, analyses, tests, or examinations.

- The second applies where noncompliance is not proven through analyses, tests, or examinations. In this case, the legislature did not oblige the stakeholder to cover these costs. Instead, the value of the sample was reimbursed to the stakeholder on the basis of the value recorded and documented in the sampling report.

This was how the legislature addressed the issue of expenses under Law No. 09--03 before its amendment. However, this approach was abandoned when Article 60 of Law No. 09--03 was repealed by Article 18 of Law No. 18--09 on Consumer Protection and Fraud Prevention.

The expenses arising from the implementation of measures such as product deposit, analyses, tests, examinations, corrective actions to restore compliance, temporary withdrawal, redirection, repurposing, seizure, and destruction are now borne by the stakeholder.[39] Regardless of whether the analyses, tests, or corrective measures ultimately confirm noncompliance.

In contrast, in regard to redirection, repurposing, seizure, and destruction, there is no question of the absence of noncompliance, as the circumstances warranting the application of these measures have already been established. In such cases, the confirmation of noncompliance is a prerequisite, and the negligent stakeholder is unequivocally required to bear the associated costs.

Section Two: Administrative Oversight of Imported Product Compliance at Border Points

In addition to monitoring product compliance at the market level, the legislature has extended oversight to border points concerning the verification of imported product compliance.

The legislature has set forth conditions for exercising this type of oversight, mandating that it be conducted prior to the customs clearance of imported goods. Furthermore, this verification must be carried out in accordance with established priorities, taking into account the specific nature of the product under inspection. In parallel, this responsibility has been assigned to specialised bodies, along with specific procedures for the administrative oversight of product compliance at border points (First).

On the basis of the findings resulting from these procedures, supervisory officers are empowered to adopt precautionary measures applicable to imported products at border points (Second).

First: Oversight Bodies and Procedures for Administrative Monitoring of Imported Product Compliance at Border Points

[39] See Article 66 of Law No. 09-03, as amended by Article 5 of Law No. 18-09 (whereby the legislature added the clause "the stakeholder shall bear the costs arising from ... analyses, tests, or examinations," which had not been included in Article 66 prior to the amendment).

Public authorities have established essential conditions to ensure the compliance of products entering Algeria, particularly in light of the recent rise in fraudulent practices and the importation of noncompliant goods.[40] Therefore, the legislature has stipulated that products that are not marketed in their country of origin due to failure to meet safety requirements may not be placed on the national market.[41]

On this basis, the legislature has sought to combat such violations through administrative oversight by creating specialised bodies responsible for monitoring compliance at border points, alongside establishing specific procedures governing the administrative oversight of imported products.

1. Oversight Bodies at Border Points

Pursuant to the provisions of Executive Decree No. 05--467, which sets out the conditions and procedures for monitoring the compliance of imported products at border points,[42] Article 2 states that compliance oversight of imported products is carried out at land, sea, and air border checkpoints by border inspectorates under the authority responsible for consumer protection and fraud prevention. In addition, customs services also play a crucial role not only in safeguarding state borders in terms of security and economic control but also in protecting consumers by preventing the entry of counterfeit and fraudulent goods and monitoring their circulation.[43]

In addition to the aforementioned authorities, the role of fraud prevention officers under the Ministry of Commerce must also be emphasised. Thus, administrative oversight at border points, aimed at ensuring product compliance, is conducted in coordination among the following bodies:

A. Border Inspectorates under the Authority Responsible for Consumer Protection and Fraud Prevention

In the application of Article 6 of Executive Decree No. 11--09, which regulates the organisation, powers, and functions of the external services of the Ministry of Commerce, the legislature mandated that the Directorate of Commerce at the wilaya (provincial) level be equipped with inspectorates for quality control and fraud prevention at land, sea, and air border points, as well as in bonded zones and warehouses. The staffing of these inspectorates is determined according to the volume of goods transiting through each area, with the possibility of equipping these inspectorates with inspection teams as necessary.[44]

The Regional Inspectorate of Commerce and the Inspectorate for Quality Control and Fraud Prevention at land, sea, and air border points are established by a joint decree between the Minister of Commerce, the Minister of Finance, and the authority responsible for the civil service.[45] In this regard, and in application of the provisions of Article 6 mentioned above, the Joint Ministerial Decree of 13 November 2011 was issued, establishing inspectorates for quality control and fraud prevention at land, sea, and air border points, as well as in bonded zones and warehouses.[46]

---

[40] Boudehane, Moussa. *Système Juridique de la Normalisation* (Ain M'lila, Algeria: Dar El-Houda, 2011), 19.
[41] See Article 12 of Executive Decree No. 12-203 of 6 May 2012 on the Rules Applicable in the Field of Product Safety, *Official Gazette* No. 28 (9 May 2012).
[42] Executive Decree No. 05-467 of 10 December 2005 Setting the Conditions and Procedures for Monitoring the Compliance of Imported Products at Border Points, *Official Gazette* No. 80 (11 December 2005).
[43] Samah Mahmoudi and Nabil Nougui, "Oversight as a Mechanism to Protect Consumers from the Risks of Non-Compliant Products," in *The Legal System of Consumer Protection in Algerian and Comparative Legislation*, Collective Work, Law and Local Development Laboratory, University of Adrar, Algeria, September 2020, 147.
[44] See Joint Ministerial Decree of 22 September 2014 Defining the Number of Inspection Teams in the Wilaya Directorates of Commerce, Regional Inspectorates, and Inspectorates for Quality Control and Fraud Prevention at Land, Sea, and Air Borders, and in Bonded Zones and Warehouses, *Official Gazette* No. 66 (9 November 2014).
[45] See Article 6, paragraph 2, of Executive Decree No. 11-09 of 20 January 2011 Organising the External Services of the Ministry of Commerce, Their Powers, and Operations, *Official Gazette* No. 4 (23 January 2011).
[46] Joint Ministerial Decree of 13 November 2011 Establishing Inspectorates for Quality Control and Fraud Prevention at Land, Sea, and Air Borders, and in Bonded Zones and Warehouses, *Official Gazette* No. 24 (25 April 2011).

According to Article 2 of this decree, fifty inspectorates for quality control and fraud prevention were created at land, air, and sea border points, in addition to bonded areas and warehouses. The Regional Inspectorate of Commerce and the Inspectorate for Quality Control and Fraud Prevention are managed at these locations by the heads of inspectorates, who are assisted in their duties by the heads of inspection teams.[47]

The duties of the heads of inspectorates include endorsing and stamping authorisations for the entry of products found to be compliant following the completion of inspection procedures, as well as endorsing and stamping decisions of refusal in cases of noncompliance. They are also responsible for reviewing appeals submitted by importers in the event of a refusal decision. Where a violation is confirmed, the heads of inspectorates refer the case to the competent judicial authorities.[48]

B. Customs Administration Services

Border crossings hold significant importance for every state, as they control the movement of individuals and goods. In this context, the customs administration plays a crucial role, serving as the first line of defence and the first government body to receive and inspect incoming shipments. Its role is particularly vital.[49] The compliance of imported products entering national borders should be ensured.

The customs administration is entrusted with several clearly defined tasks, foremost among them being the verification that imported or exported goods have undergone compliance inspection procedures in accordance with the applicable legal and regulatory framework.[50]

Upon the arrival of imported products ,whether newly imported, reimported, or intended for export, these goods must be presented to the competent customs office for customs inspection. This process ensures that goods comply with established oversight regulations and prevents the unlawful import of noncompliant products.

2. Procedures for Administrative Oversight of Product Compliance at Border Points

Administrative oversight at border points about product compliance is conducted in the same manner as for equivalent domestically produced goods, ensuring that inspection procedures do not compromise the quality or safety of the product.

Consequently, border inspections of imported goods focus on documentary verification or visual inspection of the products, which the collection of product samples may supplement.[51] These procedures are outlined below.

A. Documentary Verification

Border inspections of imported products begin with documentary verification as the initial procedure. This is conducted on the basis of the file submitted by the importer or their legally authorised representative to the relevant border inspectorate. The file must include the following documents:[52]

---

[47] See Article 8 of Executive Decree No. 11-09 of 20 January 2011 Organising the External Services of the Ministry of Commerce, Their Powers, and Operations, *Official Gazette* No. 4 (23 January 2011).
[48] Asma Maakouf, *Oversight of Imported Products under Consumer Protection Law in Algeria* (Master's thesis, Faculty of Law and Political Science, University of Constantine 1, 2012–2013), 39.
[49] El-Sadeq Sayad, *Consumer Protection under the New Law No. 09-03 on Consumer Protection and Fraud Prevention* (Master's thesis, Faculty of Law, University of Constantine 1, 2013–2014), 113.
[50] See Article 2 of Law No. 17-04 of 16 February 2017, Amending and Supplementing Law No. 79-07 Constituting the Customs Code, *Official Gazette* No. 11 (19 February 2017).
[51] See Article 6 of Executive Decree No. 05-467 of 10 December 2005 Setting the Conditions and Procedures for Monitoring the Compliance of Imported Products at Border Points, *Official Gazette* No. 80 (11 December 2005).
[52] See Article 3 of the same decree.

- An import declaration prepared by the importer in due form, containing detailed information about both the importer and the imported product.[53] This declaration must be signed and stamped by the importer and acknowledged by the border inspectorate, with all the information provided therein required to be accurate.

- A certified true copy of the extract from the commercial register.

- A certified true copy of the invoice.

- The originality of any other document required under the applicable regulations related to the conformity of imported products.

At this stage, the supervisory officer carefully examines all the documents accompanying the product. Once the documentary verification process is complete, the officer proceeds with a physical inspection consisting of a direct visual examination of the goods.[54]

B. Visual inspection of products

According to the provisions of Executive Decree No. 05--467, which sets forth the conditions and procedures for monitoring the compliance of imported products at border points, Article 7 provides that visual inspection is conducted to ensure the following:

- The product's compliance with legal or regulatory specifications.

- The product's compliance with conditions of use, transportation, and storage.

- The product's conformity with labelling information and/or accompanying documentation.

- The absence of any damage or potential contamination of the product.

If compliance with the imported product cannot be confirmed following documentary verification or visual inspection or if doubts regarding noncompliance persist, the procedure proceeds to the next step: **sample collection**.

C. Sample collection

When visual inspection by authorised officers necessitates sample collection, this procedure may take two forms. The most common method involves the collection of three homogeneous samples representative of the inspected batch. Alternatively, in exceptional circumstances such as perishable goods, or owing to the product's nature, weight, limited quantity, or high value, a single sample may be collected.[55]

The first sample is sent to an authorised laboratory for analysis. In contrast, the second and third samples are retained as control samples, one kept by the supervisory authority that carried out the sampling and the other by the stakeholder concerned.[56]

[53] See Article 2 of the Decree of 14 May 2006, Defining the Templates and Content of Documents Related to the Oversight of Imported Product Compliance at Border Points, *Official Gazette* No. 52 (20 August 2006), as amended.
[54] *Guide de Contrôle des Appareils Électroménagers*, Direction Générale du Contrôle Économique et de la Répression des Fraudes, Ministère du Commerce, 15.
[55] *Guide de l'Inspecteur de la Répression des Fraudes*, previously cited, 24.
[56] See Article 40 of Law No. 09-03.

Following the aforementioned sampling procedure, the sample is immediately transported, under conditions that prevent damage or deterioration of the product under inspection, to an accredited laboratory for the purpose of conducting analyses, tests, and examinations to determine the product's compliance status. The results of the inspection must be communicated by the relevant border inspectorate within forty-eight hours, counting from the date on which the importer or their legal representative submitted the file to the border inspectorate, and this must take place prior to the customs clearance of the imported goods.

This period may be extended if the analyses, tests, and examinations require additional time; however, the extension may not exceed the maximum period prescribed by regulations for the storage or temporary deposit of imported goods.[57]

The legislature's rationale for imposing these deadlines lies in the need to prevent the accumulation of imported goods at border points while ensuring that supervisory officers deliver timely decisions on each importer's file within reasonable timeframes, thereby avoiding harm to both the importer and the goods awaiting test results. The legislature acted wisely in setting these short deadlines while simultaneously allowing the use of private laboratories, in addition to state-accredited laboratories, to expedite the analysis and testing of samples under examination.

Second: Precutionary Measures Applied to Imported Products at Border Points

Supervisory officers at border points are authorised to take all the precautionary measures necessary to protect consumers from the risks posed by noncompliant products. These measures are determined on the basis of the outcomes of document verification, visual inspection, or sample collection and testing. These procedures lead to the application of two possible measures: the first is conditional authorisation for the entry of imported goods at border points; the second, which is the opposite measure, is the outright refusal of entry for imported goods at border points. These issues are discussed below.

1. Conditional Authorisation for Imported Goods at Border Points

Under Law No. 09-03 on Consumer Protection and Fraud Prevention, prior to its amendment, Article 53 suggested that supervisory officers could impose a temporary refusal of entry for goods at border points where there was suspicion of noncompliance.

The legislature subsequently amended Article 53[58] of Law No. 09--03 through Article 2 of Law No. 18--09 on Consumer Protection and Fraud Prevention. In this amendment, the term "temporary refusal of entry" was replaced with the concept of "conditional entry authorisation" for imported goods at border points.

Supervisory officers now declare conditional entry authorisation for imported goods at border points to verify their compliance within bonded areas, specialised institutions, or the importer's premises, provided that compliance verification does not pertain to the safety and security of the product. Furthermore, products subject to conditional entry authorisation may not be placed on the market for consumption until their compliance has been fully verified.[59]

---

[57] See Articles 12, 13, and 14 of Executive Decree No. 05-467, Setting the Conditions and Procedures for Monitoring the Compliance of Imported Products at Border Points.

[58] This article was amended following proposals made by representatives of the Customs Administration during their presentation before the members of the Economic, Industrial, and Commercial Affairs and Planning Committee of the National People's Assembly, in the presence of the Director General of Customs. The amendment replaced the term "temporary entry" of imported goods with a more precise expression to ensure effective customs operations in the field and to prevent legal loopholes that could be exploited for illicit purposes. The representatives also proposed several amendments to strengthen consumer protection and safeguard the national economy. These discussions took place during the debate on Law No. 09-03 on Consumer Protection and Fraud Prevention before the National People's Assembly. See article published on the Algerian Press Service website, 2 February 2018, https://www.aps.dz/ar/economie/52827-2018-02-02-17-53-10

[59] See Article 2 of Law No. 18-09, amending Article 54 of Law No. 09-03.

Compliance verification, in cases where noncompliance relates to the intrinsic quality of the product, is carried out by eliminating the cause of nonconformity in accordance with applicable regulations or in the manner authorised by the regionally competent directorate.

Compliance verification may also take the form of downgrading the product's classification, redirecting it for processing, or repurposing it for a different use, provided that these corrective actions do not damage the quality of the product.[60]

The compliance verification process is conducted under the supervision of the consumer protection and fraud prevention authorities at the location where the verification takes place. Once this process is completed and all causes of noncompliance are fully resolved, the relevant border inspectorate issues an authorisation for the entry of the imported product. If compliance verification is not carried out within the required timeframes at the specialised institution or the importer's warehouses, the noncompliant product is seized.[61]

Supervisory officers may also, without the need for sample collection and based solely on the aforementioned documentary verification or visual inspection of the product, grant authorisation for the entry of the product. The competent border inspectorate issues this authorisation if no violation is detected.[62]

Accordingly, to revise the previously adopted model of "product entry authorisation," the legislature issued the decree of 19 November 2019.[63] The decree of May 2006 defines the templates and content of documents related to the inspection of imported products at border points. This decree introduced a standardised model for conditional entry authorisation for products, which must be used by supervisory officers when issuing such decisions.

Thus, conditional entry authorisation is prepared by supervisory officers for the purpose of verifying compliance. This document records all relevant information concerning the importer, details of the imported product subject to inspection, and a description of the inspections carried out. On the basis of these inspections, conditional entry for compliance verification is granted, with the head of the border inspectorate endorsing and stamping the authorisation, specifying the date of issuance.

2. Final Refusal of Entry for Imported Products at Border Points

In addition to conditional entry authorisation for imported goods at border points, a further measure may be imposed in cases of noncompliance: the final refusal of entry for imported products at border points. Article 53 of Law No. 09-03 on Consumer Protection and Fraud Prevention (as amended and supplemented) provides that supervisory officers may take all the precautionary measures necessary to protect consumers, including the final refusal of entry for imported goods at border points. This measure is declared when noncompliance is established, either through visual inspection or thorough investigations.[64]

It is applied in cases where violations are detected during documentary verification, visual inspection, or after confirmation through sample testing. In such cases, the competent border inspectorate issues a formal decision of refusal of entry, clearly stating the reason for the refusal.[65]

---

[60] See Article 19 of Executive Decree No. 05-467, Setting the Conditions and Procedures for Monitoring the Compliance of Imported Products at Border Points.
[61] See Articles 20 and 21 of the same decree.
[62] See Article 9 of the same decree.
[63] Decree of 19 November 2019 Supplementing the Decree of May 2006, Defining the Templates and Content of Documents Related to the Oversight of Imported Product Compliance at Border Points, *Official Gazette* No. 8 (16 February 2020).
[64] See Article 54 of Law No. 09-03.
[65] See Article 9 of Executive Decree No. 05-467, Setting the Conditions and Procedures for Monitoring the Compliance of Imported Products at Border Points.

Supervisory officers draft the decision of refusal of entry. They must include detailed information about the importer and the imported product, along with a record of the various inspection procedures carried out. It is also mandatory for the decision to clearly state the reasons for refusal.[66]

However, under the provisions of Executive Decree No. 05--467, which sets forth the conditions and procedures for monitoring the compliance of imported products at border points, Article 10 grants importers the right to appeal a decision of final refusal of entry for their imported goods. This appeal may be exercised through a three-tier process:

A. Appeal by the Importer Against the Reason for Refusal of Entry Before the Competent Wilaya Directorate of Commerce

The importer or their legally authorised representative may file a legally substantiated appeal with the territorially competent wilaya Directorate of Commerce. This right enables the importer to contest the grounds for the refusal of entry, and the details of the appeal are recorded in a hearing report.

To exercise this right, the importer must submit the appeal within eight days, counted from the date on which supervisory officers notified them of the refusal of entry. The wilaya Directorate of Commerce then has a period of four working days to review the reasons outlined in the appeal. If the appeal is found to be legally sound and well founded, the refusal decision is overturned. If, however, the review of the appeal, as documented in a detailed report, confirms the findings on which the refusal decision was based, the refusal is upheld.[67]

B. Appealing by the Importer Against the Reason for Refusal of Entry Before the Competent Regional Directorate of Commerce

If the importer remains determined to exercise their right to appeal the decision of refusal of entry and fails in having the decision overturned by the territorially competent wilaya Directorate of Commerce, the legislature, pursuant to the provisions of Executive Decree No. 05--467 and Article 15 thereof, grants the importer the right to submit an appeal to the territorially competent regional Directorate of Commerce. This appeal concerns the disposition of the noncompliant product, whether for compliance verification, repurposing, re-export, or destruction. The regional Directorate of Commerce has five working days to decide on the appeal submitted at its level.

C. Notification by the Importer to the Central Authority Responsible for Consumer Protection and Fraud Prevention Regarding the Refusal of Entry

If the importer receives no response to their appeal or if the response is not delivered within the prescribed timeframe, they may notify the central authority responsible for consumer protection and fraud prevention to obtain a final decision on their request.[68]

Thereafter, the relevant border inspectorate is notified of the cancellation of the decision to refuse entry of the product. Suppose the imported product is found to be noncompliant. In that case, the border inspectorate that ordered the refusal of entry should transmit a copy of this decision to the customs services at the point where the imported product entered the national territory.[69]

---

[66] See Article 5 of the Decree of 14 May 2006, Defining the Templates and Content of Documents Related to the Oversight of Imported Product Compliance at Border Points, *Official Gazette* No. 52 (20 August 2006), as amended.
[67] See Articles 10 and 11 of Executive Decree No. 05-467, Setting the Conditions and Procedures for Monitoring the Compliance of Imported Products at Border Points.
[68] See Article 16 of Executive Decree No. 05-467, Setting the Conditions and Procedures for Monitoring the Compliance of Imported Products at Border Points.
[69] See Articles 11 and 24, paragraph 2, of the same decree.

However, after the importer's right to appeal against a decision refusing entry of a product under the provisions of Executive Decree No. 05--467, which sets the conditions and procedures for monitoring the compliance of imported products at border points, this right has been granted in an absolute and undefined manner. The legislature has merely required that the appeal be legally substantiated, without specifying the circumstances in which the importer may or may not exercise this right. In our view, it would be preferable for the legislature to clearly determine the cases in which an appeal is permissible and those in which it is not. For example, when supervisory officers conduct inspections through documentary verification or visual observation, it is reasonable to recognise the importer's right to appeal, given that errors in assessing compliance may occur. However, once samples have been collected and analysed by specialised laboratories, it cannot reasonably be argued that such results remain challenging. It would therefore be desirable for the legislature to address and clarify this point, establishing the circumstances under which appeals are admissible to avoid unnecessary delays and the excessive number of appeals submitted by importers.

Moreover, in this context, an additional penalty has been established for violations of precautionary measures to ensure their integrity and prevent interference by stakeholders, whether at the market level or at border points. Article 155 of the Penal Code[70] Criminalises the intentional breaking of seals affixed by the order of a public authority or any attempt thereof. Where the breaking of seals, or an attempt to do so, is committed by the designated custodian, or through the use of violence against persons, or with the intent to steal or destroy evidence or legal documents in criminal proceedings, the offense is punishable by imprisonment for a term of two to five years.

Furthermore, Article 79[71] of Law No. 09-03 on Consumer Protection and Fraud Prevention (as amended and supplemented) provides that any person who sells a product that has been sealed, deposited for compliance verification, temporarily withdrawn from the market, or who violates an order for temporary suspension of activity or administrative closure of commercial premises shall be punished by imprisonment for a term of six months to three years and a fine ranging from five hundred thousand to two million Algerian dinars or by one of these two penalties.

On the basis of all the above, and pursuant to Article 12 of Law No. 09--03 on Consumer Protection and Fraud Prevention, the legislature has required stakeholders to exercise prior self-monitoring in addition to affirming the powers of the administration to carry out such oversight and adopt appropriate precautionary measures accordingly.

At the same time, the administration must act with reasonableness and proportionality in exercising the oversight powers conferred upon it so as not to deviate from its legitimate objectives and risk an abuse of authority. Notably, all the aforementioned measures and their consequences do not preclude negligent stakeholders from being subject to civil and criminal liability.[72]

Conclusion:

This study demonstrates that administrative oversight of product compliance constitutes one of the fundamental pillars of the consumer protection framework in Algeria, enabling administrative authorities to intervene directly both at the market level and at border points. With respect to domestic products, procedures such as inspection, examination, and sampling have proven important in the early detection of violations, a process further strengthened by the administration's powers to adopt precautionary measures, including seizure, withdrawal, or even destruction. For imported products, the pivotal role of overseeing bodies at border points is evident through strict procedures that may culminate in either conditional entry or final refusal.

On this basis, the following findings and recommendations can be drawn:

[70] Ordinance No. 66-156 of 8 June 1966, Constituting the Penal Code, *Official Gazette* No. 49 (11 June 1966), as amended and supplemented.
[71] Article 79 of Law No. 09-03 was supplemented by Article 9 of Law No. 18-09.
[72] Mohamed Imad Eddine Ayad, *The Consumer Contract in Algerian Legislation* (previously cited), 401.

- Administrative oversight is an effective mechanism for limiting the circulation of noncompliant products.
- The effectiveness of oversight is contingent upon strengthening coordination among various regulatory bodies.
- It is essential to equip oversight agencies with advanced technical means to facilitate swift and accurate detection.
- The imposition of stricter penalties on offenders is crucial to ensuring effective deterrence and enhanced consumer protection.

In conclusion, fostering a culture of effective oversight of both domestic and imported products represents a genuine safeguard for consumer protection and the preservation of the state's economic public order.

Acknowledgment

The author expresses sincere gratitude to the Faculty of Law and Political Science, University Kasdi Merbah Ouargla, Algeria, for providing the academic environment and resources that facilitated the development of this research. Special thanks are extended to colleagues and peers who contributed through constructive discussions and feedback during the preparation of this paper.

Conflict of Interest

The author declares no conflict of interest related to the research, authorship, or publication of this article.

References

1. Ayad, M. I. E. (2016). The consumer contract in Algerian legislation (Unpublished doctoral dissertation). Faculty of Law and Political Science, University of Blida 2.
2. Boudehane, M. (2011). Système juridique de la normalisation. Ain M'lila, Algeria: Dar El-Houda.
3. Boudali, M. (2006). Consumer protection in comparative law: A comparative study of French law. Cairo, Egypt: Dar Al-Kitab Al-Hadith.
4. Gaddach, S. (2019). The obligation to guarantee products in consumer contracts (Doctoral dissertation). Faculty of Law and Political Science, University of Batna 1.
5. Houria Si Youssef, Z. (2017). Study of Law No. 09-03 of 25 February 2009 on Algerian consumer protection. Algiers, Algeria: Houma Printing, Publishing, and Distribution.
6. Khadidji, A. (2016). Rules of commercial practices in Algerian law (Doctoral dissertation). Faculty of Law and Political Science, University of Hadj Lakhdar Batna.
7. Maakouf, A. (2013). Oversight of imported products under consumer protection law in Algeria (Master's thesis). Faculty of Law and Political Science, University of Constantine 1.
8. Mahmoudi, S., & Nougui, N. (2020). Oversight as a mechanism to protect consumers from the risks of non-compliant products. In The legal system of consumer protection in Algerian and comparative legislation (pp. 147–160). Law and Local Development Laboratory, University of Adrar.
9. Marie, A. (2008). Les enquêtes de la DGCCRF en matière de pratiques anticoncurrentielles. Revue LAMY de la concurrence, 14(January–March), 115.
10. Sayad, E. (2014). Consumer protection under the new Law No. 09-03 on consumer protection and fraud prevention (Master's thesis). Faculty of Law, University of Constantine 1.

11. Executive Decree No. 05-467 of 10 December 2005, Setting the conditions and procedures for monitoring the compliance of imported products at border points. Official Gazette of Algeria, 80, 11 December 2005.
12. Executive Decree No. 09-415 of 16 December 2009, Establishing the special statute governing employees in the special ranks of the administration in charge of commerce. Official Gazette of Algeria, 75, 20 December 2009.
13. Executive Decree No. 11-09 of 20 January 2011, Organising the external services of the Ministry of Commerce, their powers, and operations. Official Gazette of Algeria, 4, 23 January 2011.
14. Executive Decree No. 12-203 of 6 May 2012, Rules applicable in the field of product safety. Official Gazette of Algeria, 28, 9 May 2012.
15. Joint Ministerial Decree of 13 November 2011, Establishing inspectorates for quality control and fraud prevention at borders, bonded zones, and warehouses. Official Gazette of Algeria, 24, 25 April 2011.
16. Joint Ministerial Decree of 22 September 2014, Defining the number of inspection teams in commerce directorates and inspectorates. Official Gazette of Algeria, 66, 9 November 2014.
17. Law No. 04-02 of 23 June 2004, Establishing the rules applicable to commercial practices. Official Gazette of Algeria, 41, 27 June 2004.
18. Law No. 09-03 of 25 February 2009, Consumer protection and fraud prevention. Official Gazette of Algeria, 15, 8 March 2009 (as amended by Law No. 18-09 of 10 June 2018, Official Gazette of Algeria, 35, 13 June 2018).
19. Law No. 17-04 of 16 February 2017, Amending and supplementing Law No. 79-07 constituting the Customs Code. Official Gazette of Algeria, 11, 19 February 2017.
20. Ordinance No. 66-155 of 8 June 1966, Code of Criminal Procedure. Official Gazette of Algeria, 65, 26 August 2021 (as amended and supplemented by Ordinance No. 21-11 of 25 August 2021).
21. Ordinance No. 66-156 of 8 June 1966, Constituting the Penal Code. Official Gazette of Algeria, 49, 11 June 1966.
22. Direction Générale du Contrôle Économique et de la Répression des Fraudes. (n.d.). Guide de contrôle des appareils électroménagers. Ministère du Commerce.
23. Direction Générale du Contrôle Économique et de la Répression des Fraudes. (n.d.). Guide de l'inspecteur de la répression des fraudes. Ministère du Commerce.
24. Algerian Press Service. (2018, February 2). Amendments to Law No. 09-03 on consumer protection and fraud prevention. APS.dz. https://www.aps.dz/ar/economie/52827-2018-02-02-17-53-10

RESEARCH ARTICLE

The efforts of Anatolian scholars in Arabic phonetics through the book "Juhd al-Muqil" by al-Mar'ashi

Younesse Zouaoui
Dr.
Ali Lounici University of Blida 2
Algeria
Email: ey.zouaoui@univ-blida2.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Phonetics, Al-Mar'ashi, Juhd al-muqil, Anatolian scholars, Praat.

Abstract
Arabic phonetics, like other linguistic sciences, has gone through various stages, beginning with the early beginnings of linguists and grammarians in the first century AH (seventh century AD) with al-Du'ali and his companions. The study of Arabic phonetics was not limited to Arab scholars or those from the Arabian Peninsula; rather, it extended to all scholars belonging to the Islamic civilization as its geographic scope expanded. The most prominent of these scholars were the scholars of the Anatolian region, especially during the Ottoman era, including Muhammad ibn Abi Bakr al-Mar'ashi. The study aims to focus on his most prominent phonetic contributions to the Arabic language and the extent of their novelty and innovation compared to his predecessors. The importance of this research paper lies in its focus on Al-Mar'ashi's phonetic innovations, strengthening the study in some phonetic aspects with analytical data from the popular Praat program..

Citation. Yahiaoui K. (2025). Administrative Oversight of Product Compliance as a Mechanism for Consumer Protection in Algerian Legislation. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 108–119. https://doi.org/10.56352/sei/8.11.9

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.02.2025 | Accepted: 01.07.2025 | Published: 27.08.2025 (available online)

1. Introduction:

The first beginnings of Arabic phonetic studies were manifested with the first century of Hijri history; that is, in the seventh century AD, its origin was not as an independent science, but its material and its beginnings appeared as a way to reach non-phonetic goals and objectives, and because most of the sciences among the Arabs at that time had religious purposes, namely, to understand the Holy Quran, being the Holy Book of Muslims and their first source of Islamic legislation, as well as to understand the noble Hadith because it is the second source of legislation among Muslims as well, because it is the second source of legislation among Muslims, and and this understanding is only through Therefore, one of the first Arabic linguistic Sciences that appeared was the science of grammar and lexicography, so that the first would be a standard keeper of the Arabic system of displacement, and the second would preserve the Arabic vocabulary structure and meaning‹Among the first grammatical studies we find the famous story of Abu Al-Aswad Al-Du'ali with his servant when he said to him: "If you see me open my mouth with a letter, then put a dot above it on top of it. If I close my mouth, then put a dot in front of the letter. If I break it, then put the dot under the letter. If you follow something of that with a nasal sound, then put two dots in place of the dot."(Abu Sa'id al-Sirafi, 1966, 13)

We also find among the first lexical studies the book Al-Ayn by Al-Khalil bin Ahmad Al-Farahidi. It may come to mind to ask about the relationship between what we have mentioned and phonetic studies. When we contemplate the origin of the two sciences, we find it to be purely phonetic, through the construction of the science of grammar at the beginning - starting from the aforementioned story - on the phonetic side in the position of the articulation

apparatus, the movement of the lips, and the mechanism of producing consonants and short vowels such as fatha, damma, and kasra, and through the construction of Al-Khalil's dictionary of 'Ayn on a phonetic basis that appears in its title and in the reason for the name, which is on a purely phonetic basis through Al-Khalil's choice of the first of the fixed consonants as a point of articulation and description in the case of singular or compound, which is the sound of 'Ayn. Or we find the phonetic side also in the introduction to the dictionary through Al-Khalil's definition of the points of articulation and descriptions of Arabic sounds, as they are the material of the Arabic word. This reminds us of Ibn Jinni's definition of language in his book Al-Khasais when he makes it essentially "sounds" in his saying: "As for its definition They are sounds through which every people express their purposes"(Ibn Jinni,1/ 34).

The vocal material is the basis of human language, and therefore all encyclopedias define it as having primarily vocal material. Britannica says in its latest update on 07/17/2025: language, a system of conventional spoken, manual (signed), or written symbols by means of which human beings, as members of a social group and participants in its culture, express themselves. The functions of language include communication, the expression of identity, play, imaginative expression, and emotional release.[1]

The Oxford Dictionary also defines language by referring to its phonetic principle, as it defines it: LANGUAGE: a system of communication consisting of sounds, words, and grammar:[2]

In this research paper, we will work on enumerating Al-Mar'ashi's most prominent contributions to Arabic phonetic studies, in what we see as a new contribution or a scientific innovation that has not been preceded by any of the previous phonetic works we have seen. Although there are previous studies that intersect with this study, we have tried to determine what highlights the man's creativity in the study of phonetics, because he is the greatest determinant of the extent of the contribution made in this field of Arabic sciences. Herein lies the importance of the study, and before embarking, it is necessary to introduce and present what the situation was like before Al-Mar'ashi.

2. The Pre-Mar'ashi Era:

We previously mentioned that the Arabs addressed several aspects of phonology in their study of grammar and lexicography. In the introduction to Mu'jam al-'Ayn, we find al-Khalil discussing the articulation points and characteristics of Arabic sounds. (Al Khalil,1/ 51).

We then find his student Sibawayh in more detail in the book when he discusses morphological issues and the phenomenon of idgham, which modern scholars call total phonetic similarity. He lists the correct spoken Arabic sounds and the incorrect ones, which are not considered desirable in the Quran or poetry. He also explains the articulation points of Arabic consonants and vowels, both short and long. According to him, there are 16 articulation points. He then explains the set of phonetic characteristics that characterize Arabic sounds, classifying them into opposing and non-opposing groups, including voiced, unvoiced, stressed, soft, and others. (Sibawayh,1988,431).

Arabic linguists continue to address phonetic issues in the service of grammar and morphology. We hardly find the independence of Arabic phonetics in its subject matter, methodology, and objectives until Ibn Jinni in the fourth century AH and the end of the tenth century AD (d. 392 AH) (zirkli,2002,204). through his book, (sir sina't al-I'rab)

However, we find the independence of phonetic issues from the linguistic sciences before Ibn Jinni, albeit by a short period, through the emergence of the science of Tajweed. We trace the beginnings of phonetic studies, making linguistic sounds the subject and objective of the study, to the authors of Tajweed books. Perhaps the first to write on it, specifying its terminology, topics, and objectives, was Abu Bakr al-Shidhai, who died in 373 AH, and it was said in 370 AH(Ibn al-Jazari,2006, 1/131).; that is, 19 years before the death of Ibn Jinni. His sheikh, Ibn Mujahid, who died in 324 AH, preceded him in mentioning some phonetic issues related to errors in the vocal performance of Arabic linguistic sounds when reciting the Qur'an.

3. Al-Mar'ashi and his scientific phonetic efforts:

[1] https://www.britannica.com/topic/language
[2] https://dictionary.cambridge.org/us/dictionary/english/language

The science of Tajweed developed, like any other science, moving from its foundational stage to its maturity and innovation. The spread of Islam in the non-Arab countries neighboring the Arabian Peninsula was the most important reason for the spread and development of the science of Tajweed, due to Muslims' need for it to pronounce the words of the Holy Quran correctly and without errors, whether singular or compound. Based on this, we can understand the abundance of Tajweed and recitation scholars in non-Arab cities near the Arabian Peninsula, including the Anatolian region, which was famous for its scholars of Tajweed and recitation. No one today discusses the phonetic studies of Tajweed scholars without mentioning Ibn al-Jazari, who died around 1430 CE. Ibn al-Jazari is considered the reference for all subsequent Tajweed scholars. He was originally from Anatolia and was nicknamed Ibn al-Jazari after "Al-Jazira" or "Ibn Umar Island," which is currently the Cizre region of Turkey. Among the Anatolian scholars who studied Arabic sounds through their compositions of Tajweed books or their grammatical commentaries and compositions, we find Muhammad ibn Mahmud ibn Ahmad, known by the nickname "Dabbaghzadeh," who died around 1702 AD. (Reda Kahala,11/ 313).

He was a scholar of grammar and interpretation, and he was the Sheikh of Islam in Turkey. Among the Anatolian scholars is also Muhammad ibn Abi Bakr al-Mar'ashi, known by the nickname "Sajkli Zadeh," who died around 1737 AD. He is the subject of this research paper, and we will talk about him and his compositions later. We find Mustafa ibn Abd al-Rahman al-Izmiri, who died around 1743 AD. The nickname "Izmiri" is in reference to the İzmir region in Turkey. He was a scholar of readings and one of the most important and prominent scholars in the region after al-Mar'ashi. We also find among the Anatolian scholars Hussein ibn Ahmad al-Barsawi, known by the nickname "Zini Zadeh," who died around 1758 AD. The nickname "al-Barsawi" is in reference to the region of Bursa is currently in Turkey. (Al Hossein ibn ahmed, 2019, 31).

Let's return to al-Mar'ashi, the subject of this research paper. Muhammad ibn Abi Bakr al-Mar'ashi was a man of knowledge and religion. He was born in the city of Mar'ashi, located in southern Turkey today. Its current administrative name is Kahramanmaraş, meaning "heroic Maraş," in honor of its resistance to the French occupation. It is a historical center rooted in successive civilizations, including the Islamic civilization. During the Ottoman era, it was famous for its religious schools. Ghanem Qaddouri al-Hamad mentioned some of these schools in his introduction to al-Mar'ashi's book, "juhd al-muqil." (al-Mar'ashi, 2008, 12).

Al-Mar'ashi lived a scholarly life in this great scholarly city, which was full of teachers and schools, which contributed to his strong and diverse scholarly upbringing, so he became a teacher of Arabic sciences, including jurisprudence, interpretation, and intonation. Among his most famous works are the book "Juhd al-Muqil" on the science of intonation, and a commentary on the book called "Bayan Juhd al-muqil," the book "Tahdhib al-Qira'at al-'Ashr," and the book "Taritib al-'Ulum," in which he discusses the various sciences and arranges them according to importance and what is related to teaching and learning them. (Ismail al-Baghdadi, 322).

He also wrote many other diverse books due to the diversity of his scholarly interests, such as books on the science of debate and logic, which had a great impact on establishing the phonetic issues in his books, especially the book "Juhd al-muqil." Whoever examines this book will find a detailed account of phonetic issues and quotes from others who preceded him. Most notable of these are his own opinions and analyses of some phonetic issues that were not detailed before him, or Ambiguous as that related to the chapter on the exits of sounds and their characteristics, as we will explain.

4. Subtle Phonetic Issues in Al-Mar'ashi's "Juhd al-muqil:"

In this section of the research paper, we will present a number of contributions to phonetics based on Al-Mar'ashi's book "Juhd al-muqil." We will focus on those that are novel and innovative, or those that demonstrate the strength of scientific grounding compared to those that preceded them.

4.1 Terminological Boundaries between the Sciences of Tajweed and Recitation:

Al-Mar'ashi emphasized the need to clarify the semantic boundaries between the science of Tajweed and the science of recitation, despite their close connection. This is because the science of Tajweed cannot exist without the presence of the science of recitation, given that the subject of the science of Tajweed is the Qur'anic text in its vocal performance. This science cannot exist without its established corpus—I mean the Holy Qur'an through the regulation of the Qur'anic recitations. Al-Mar'ashi also realized the need to clarify the concept of the science of

Tajweed at the beginning of the book, immediately after the introduction. To clarify for the reader what phonetic issues he will mention related to the science of Tajweed and what he will leave out due to its connection to the science of recitation, he says: "If you ask: What is the difference between the sciences of Tajweed and Qira'at? I say: The science of Qira'at is a science in which the differences of the imams of different regions in the arrangement of the Qur'an are known, whether in the letters themselves or in their characteristics. If something about the nature of the characteristics of the letters is mentioned in it, then it is a completion, since the purpose is not related to it. As for the science of Tajweed, its purpose is to know the nature of the characteristics of the letters. If something about the differences of the imams is mentioned in it, then it is a completion." Thus, Al-Mar'ashi systematically and scientifically establishes the phonetic issues he will study, or what can be expressed in the language of science as defining the concept and subject of this science.

4.2 The Concept of Sound and Air:

Al-Mar'ashi mentions the views of his predecessors, such as Sibawayh, Mulla Ali al-Qari, and Ahmad ibn Muhammad ibn al-Jazari, in his definition of sound, breath, and the relationship between them. He then provides a summary of his precise understanding of the concept of sound and the mechanism of its production. He states that sound is audible air. This indicates that air never becomes sound before passing through the larynx, and that the origin of sound is air. This phonetic analysis is completely consistent with the definitions indicated by international dictionaries. The Encyclopedia Britannica, in its most recent edition, defines the term "phonetics" as the beginning of sound production through the passage of air from the lungs. A Dictionary of Phonetics and Phonology also defines the consonant and confirms the above, stating:

consonant /lkDns˜n˜nt/ n. 1. (also contoid) In phonetics, a segment whose articulation involves a significant obstruction to air flow in the vocal tract. (Trask, 1996, 87).

We should not overlook the fact that Al-Mar'ashi refers to the issue of the vocal cords vibrating and not vibrating when air passes over the larynx. He calls the air that vibrates the vocal cords "audible breath," while the air that does not vibrate with them is called air.

4.3 Consonants and Vowels:

Al-Mar'ashi stated that consonants are essentially formed by stress and interruption, whether that interruption is weak or strong, as he says: "All letters, except for the long alif, share the same basic reliance on the point of articulation, but vary in the strength of that reliance." Immediately following this text, he compares consonants and vowels, clearly defining the difference between consonants and vowels, stating that the air rushing in clearly interrupts the sound, while the interruption is much less or nonexistent in vowels. Therefore, he excluded the long alif in the previous definition. Because it is an extended sound without interruption, there is no difference between what Al-Mar'ashi mentioned and what we find in our time in terms of an analysis of the difference between them with the development of instruments. The Encyclopedia Britannica mentioned this in the following text: Most authorities would agree that a vowel is a sound that is produced without any major constrictions in the vocal tract, so that there is a relatively free passage for the air. The encyclopedia indicates that vowels do not undergo major constriction, which is something shared between Arabic and English in the mechanism of vowel production, such as a, i, o. Al-Mar'ashi emphasizes this when he gives us another reminder that consonants can be interrupted at their point of articulation by interruption, unlike vowels, which are projected without effort.

4.4 Details of the points of articulation of the letters nūn and ra:'

Nūn and ra' are alveolar sounds that are produced jointly by the tip of the tongue, which is the tip, and the gums at the bases of the upper incisors. (Ahmad mokhtar omar, 1997, 317).

I have not found in the international phonetic dictionaries available to me a clear explanation and comparison of the position of the tongue when producing the two linguistic sounds, despite their shared interception area. In ancient and modern Arabic phonetic studies, there is disagreement about whether these two sounds are united in their point of articulation or not. However, al-Mar'ashi explained to us in detail the mechanism of producing each sound. The intercepted part of the tongue when producing the nūn sound is its head, and the intercepted part in the lām is the tip of the tongue with its back near its head. This is a detail I have not found anyone mentioning. Ghanim Qadduri

al-Hamad also stated this explicitly, saying: "I have not found anyone who preceded al-Mar'ashi in such detail in determining the points of articulation of the rā'." and the letter "nun".

4.5 The effect of the vocal cords:

Arabic sounds are characterized by various characteristics, including whether they are voiced or voiceless. The voiceless sounds, which are unanimously considered voiceless, are ten: /fa/, /ha/, /tha/, /ha'/, /shin/, /kha/, /sad/, /sin/, /qaf/, and /ta/(/ت/، /ك/، /س/، /ص/، /ش/ ، /خ/ ، /ح/ ، /ث/ ، /ه/ ، /ف/) .

All other Arabic sounds are voiced. Voiceless is a state of stillness of the vocal cords in the larynx when air rushes in due to their opening, while voiced sounds result from the vibration of the vocal cords. The phoneticians who preceded al-Mar'ashi differed in defining the concept of voiced and unvoiced speech due to their inability to determine the reason for voiced and unvoiced speech. The school of phonetics from the beginning of the linguistic sciences among the Arabs until the time of al-Mar'ashi was the school of taste and self-observation. (al-Mar'ashi, 2008, 12). Al-Mar'ashi tried to search for the essential difference between the two phonetic groups by representing the sounds /dh/ and /th/.

5. Subtle Phonetic Issues in Al-Mar'ashi's "Juhd al-muqil:"

In this section of the research paper, we will present a number of contributions to phonetics based on Al-Mar'ashi's book "Juhd al-muqil." We will focus on those that are novel and innovative, or those that demonstrate the strength of scientific grounding compared to those that preceded them.

5.1 Terminological Boundaries between the Sciences of Tajweed and Recitation:

Al-Mar'ashi emphasized the need to clarify the semantic boundaries between the science of Tajweed and the science of recitation, despite their close connection. This is because the science of Tajweed cannot exist without the presence of the science of recitation, given that the subject of the science of Tajweed is the Qur'anic text in its vocal performance. This science cannot exist without its established corpus—I mean the Holy Qur'an through the regulation of the Qur'anic recitations. Al-Mar'ashi also realized the need to clarify the concept of the science of Tajweed at the beginning of the book, immediately after the introduction. To clarify for the reader what phonetic issues he will mention related to the science of Tajweed and what he will leave out due to its connection to the science of recitation, he says: "If you ask: What is the difference between the sciences of Tajweed and Qira'at? I say: The science of Qira'at is a science in which the differences of the imams of different regions in the arrangement of the Qur'an are known, whether in the letters themselves or in their characteristics. If something about the nature of the characteristics of the letters is mentioned in it, then it is a completion, since the purpose is not related to it. As for the science of Tajweed, its purpose is to know the nature of the characteristics of the letters. If something about the differences of the imams is mentioned in it, then it is a completion." Thus, Al-Mar'ashi systematically and scientifically establishes the phonetic issues he will study, or what can be expressed in the language of science as defining the concept and subject of this science.

5.2 The Concept of Sound and Air:

Al-Mar'ashi mentions the views of his predecessors, such as Sibawayh, Mulla Ali al-Qari, and Ahmad ibn Muhammad ibn al-Jazari, in his definition of sound, breath, and the relationship between them. He then provides a summary of his precise understanding of the concept of sound and the mechanism of its production. He states that sound is audible air. This indicates that air never becomes sound before passing through the larynx, and that the origin of sound is air. This phonetic analysis is completely consistent with the definitions indicated by international dictionaries. The Encyclopedia Britannica, in its most recent edition, defines the term "phonetics" as the beginning of sound production through the passage of air from the lungs. A Dictionary of Phonetics and Phonology also defines the consonant and confirms the above, stating:

consonant /lkDns˜n˜nt/ n. 1. (also contoid) In phonetics, a segment whose articulation involves a significant obstruction to air flow in the vocal tract. We should not overlook the fact that Al-Mar'ashi refers to the issue of the vocal cords vibrating and not vibrating when air passes over the larynx. He calls the air that vibrates the vocal cords "audible breath," while the air that does not vibrate with them is called air.

5.3 Consonants and Vowels:

Al-Mar'ashi stated that consonants are essentially formed by stress and interruption, whether that interruption is weak or strong, as he says: "All letters, except for the long alif, share the same basic reliance on the point of articulation, but vary in the strength of that reliance." Immediately following this text, he compares consonants and vowels, clearly defining the difference between consonants and vowels, stating that the air rushing in clearly interrupts the sound, while the interruption is much less or nonexistent in vowels. Therefore, he excluded the long alif in the previous definition. Because it is an extended sound without interruption, there is no difference between what Al-Mar'ashi mentioned and what we find in our time in terms of an analysis of the difference between them with the development of instruments. The Encyclopedia Britannica mentioned this in the following text: Most authorities would agree that a vowel is a sound that is produced without any major constrictions in the vocal tract, so that there is a relatively free passage for the air. The encyclopedia indicates that vowels do not undergo major constriction, which is something shared between Arabic and English in the mechanism of vowel production, such as a, i, o. Al-Mar'ashi emphasizes this when he gives us another reminder that consonants can be interrupted at their point of articulation by interruption, unlike vowels, which are projected without effort.

5.4 Details of the points of articulation of the letters nūn and ra:'

Nūn and ra' are alveolar sounds that are produced jointly by the tip of the tongue, which is the tip, and the gums at the bases of the upper incisors. I have not found in the international phonetic dictionaries available to me a clear explanation and comparison of the position of the tongue when producing the two linguistic sounds, despite their shared interception area. In ancient and modern Arabic phonetic studies, there is disagreement about whether these two sounds are united in their point of articulation or not. However, al-Mar'ashi explained to us in detail the mechanism of producing each sound. The intercepted part of the tongue when producing the nūn sound is its head, and the intercepted part in the lām is the tip of the tongue with its back near its head. This is a detail I have not found anyone mentioning. Ghanim Qadduri al-Hamad also stated this explicitly, saying: "I have not found anyone who preceded al-Mar'ashi in such detail in determining the points of articulation of the rā'." and the letter "nun".

5.5 The Effect of the Vocal Cords:

Arabic sounds are characterized by various characteristics, including whether they are voiced or voiceless. The ten voiceless sounds that are unanimously considered voiceless are: /f/, /h/, /th/, /h/, /sh/, /kh/, /s/, /s/, /k/, and /t/. All other Arabic sounds are voiced. Voiceless is a state of stillness of the vocal cords in the larynx when air rushes in due to their opening, while voiced sounds result from the vibration of the cords. Phoneticians who preceded al-Mar'ashi differed in defining the concept of voiced and unvoiced speech, due to their inability to determine the cause of voiced and unvoiced speech. The approach of phoneticians from the beginning of linguistics among the Arabs until al-Mar'ashi's time was based on taste and subjective observation. Al-Mar'ashi attempted to explore the essential difference between the two phonetic groups by illustrating the sounds /dh/ and /th/, saying: "... If you say 'idh' with a voiced consonant and extend it, you will find its entire breath conditioned by a voiced sound. If you say 'as' with a silent consonant and extend it, you will find the beginning of its breath conditioned by a voiced sound, and its end devoid of that voiced sound, but rather conditioned by a silent sound. And so on." Elsewhere, he calls voiced speech the audible breath, and unvoiced speech the air. Air flows less when pronouncing voiced sounds than when pronouncing unvoiced sounds, while unvoiced sounds are accompanied by a flow. Large, and this is a fact proven by phonetic science in the modern era. This scientific fact is consistent with Al-Mar'ashi's precise observation about the scarcity of air in voiced sounds and its intense rush in unvoiced sounds. (Ladefoged, P., & Johnson, K, 2010, 02).

5.6 The Attribute of Emphasis:

Emphasis is a phonetic characteristic of seven Arabic linguistic sounds: /kh/, /s/, /d/, /gh/, /t/, /q/, /z/. (/خ/ ، /ص/ ، /ض/ ، /غ/ ، /ط/ ، /ق/ ، /ظ/.)

This group of sounds is called the emphatic sounds, and this characteristic is produced by the elevation (raising) of the tongue toward the upper palate. However, this elevation of the tongue occurs in two forms:

The first form: When producing emphatic sounds, the tongue is elevated until it aligns with the upper palate. This intense elevation necessarily generates another characteristic, which is the characteristic of "occlusion." The tongue is

in an occlusion position when producing four of the seven emphatic sounds, which is what is called in Arabic phonemes are "emphatic letters," which are: /q/, /t/, /b/, /j./

The second form: where the tongue is raised and raised toward the upper palate, but does not close to it. This position of the tongue occurs when producing the three remaining sounds: /g/, /kh/, and /q./

We find that the letters of emphatic pronunciation—like many adjectives—have been mentioned in linguistic books since the beginning of Arabic linguistic studies. Sibawayh mentioned them when discussing "imala," saying: "The letters that prevent imala are these seven: Ṣād, Ḍād, Ṭā', Ḍā', ghin, kaf,and kha'.(الصّاد، والضّاد، والطّاء، والظّاء والغين، والقاف، والخاء) (al-Mar'ashi, 2008, 14)

These letters are prohibited from imala because they are letters that are raised to the upper palate. We find that most of the scholars of tajweed after Sibawayh agree with him in defining isti'la and specifying its Arabic sounds. I have followed their definitions in the books of tajweed scholars that I have, starting with Makki and al-Dani and reaching al-Mar'ashi, and I found their expressions to be almost identical. They explain the characteristic of isti'la by the elevation and ascent of the tongue to the upper palate with the seven letters: Ṣād, Ḍād, Ṭā', Ḍā', Ḍā', Ḍā', Ḍā', Ḍā', and Ḍā'. However, although Al-Mar'ashi agreed with his predecessors in their description of the mechanism of isti'la', he went further in clarifying it and elaborated on the position of the tongue in precise detail. What is meant by isti'la' is not the entire tongue, but rather its back part, or what the scholars of Tajweed call "the back of the tongue. (al-Mar'ashi, 2008, 151-152)

" Al-Mar'ashi explained the difference between the isti'la' and others that are produced by raising the tongue, such as the letters in the middle of the tongue /j/ and /sh/, saying: "What became clear to the poor person after much contemplation of Al-Jarbardi's words is that what is considered in isti'la' in their terminology is the elevation of the back of the tongue, whether the rest of the tongue is elevated with it or not. The letters in the middle of the tongue, which are the jim, the shin, and the ya', are only elevated in the middle of the tongue, and the kaf is only elevated between the back of the tongue and its middle. Therefore, these four are not considered as isti'la', even if the tongue is elevated, because its elevation in these four is not like its elevation with the isti'la' letter." The maximum degree of emphasis is consonant consonant, as we mentioned. Therefore, every consonant that is consonant is consonant, but the opposite is not true. It should be noted that modern phoneticians call the three sounds: /q/, /kh/, and /g/ "consonantal" (tabak) in reference to the palate, which is the soft palate toward which the tongue ascends. Al-Mar'ashi's detailed explanation of the part of the tongue that ascends is supported by modern phonetic studies and described by phoneticians. Technical studies have proven that the root of the tongue (which al-Mar'ashi calls the "extreme part of the tongue") is the one involved in emphasis. The Encyclopedia Britannica mentioned this in its Arabic Phonetic System update dated 03/06/2025.

5.7 Emphasis:

Emphasis is a vocal characteristic that is considered an auditory effect resulting from emphasis. Al-Mar'ashi defines it as: "A fatness that enters the body of the letter, filling the mouth with its resonance." By "the mouth is filled with its resonance," he means that emphasis fills the resonance chamber. It is formed when the back of the tongue is raised, the passageway is narrowed, and the movement and shape of the articulatory organs involved in sound production are interfered with. This confirms Al-Mar'ashi's understanding through his definition of this auditory phenomenon as being linked to phonetic performance, unlike many modern scholars who have confused the two concepts.

Such as Cantino, who considers emphasis and closure to be one and the same, stating: "It is not possible to differentiate emphasis from closure and superiority." Samir Sharif Istitieh objected to this confusion among some modern scholars, saying: "It may be a common assumption among phonetics students that emphasis and closure are two terms that refer to the same meaning. This is an assumption whose prevalence does not prove its validity." To complete Hassan's precise description, he must mention it, where he says: "Exaggeration is, therefore, a phonetic phenomenon resulting from organic movements that alter the shape of the resonating chambers to the extent that it gives the sound this emphasized vocal value." The reason for this emphasis can be summarized by mentioning the most important articulatory positions assumed by the articulatory organs:

-The movement of the tongue root backward toward the palatal wall.

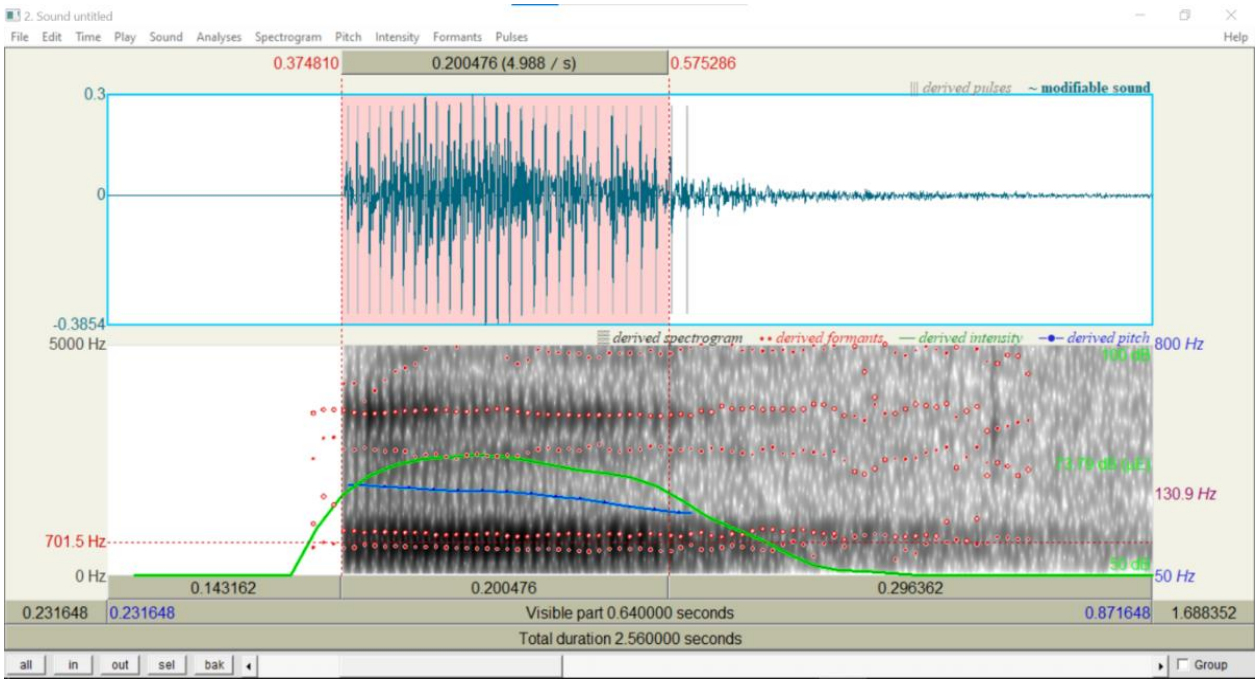
-The occurrence of a narrowing resulting from the retraction of the tongue root.

-Changes in the shape of the tongue.

All of this creates an oral resonance chamber, a precise description mentioned by Al-Mar'ashi in his previous statement, "The mouth is filled with its echo".

5.8 Degrees of Emphasis:

In this part of the study, we will analyze a sample of audio recordings I previously made using PRAAT, a free computer program designed by Dutch scientists David Weeninck and Paul Boersma at the Institute of Phonetics at the University of Amsterdam. It analyzes sound waves and spectrally analyzes the sound, allowing for the analysis of its acoustic properties, such as voiced or whispered, and friable or explosive sounds. It provides values for the sound waves in terms of amplitude, length, frequency, and other parameters. It also displays the values of the various acoustic parameters (resonant frequencies) that we rely on to analyze the emphatic quality. Here is a sample of a spectral image of a linguistic sound:



The red dots indicate the five vocal folds, and the solid blue line represents the voice pitch (vibration of the vocal cords). The spectral image shows the vertical blue lines that represent the vibrational image of the sound. The vocal part selected for analysis is colored pink, with its articulation time in seconds and fractions of a second. For example, the attached image has a part with a time length of 0.200476 seconds. To analyze the degrees of emphasis, the values of the second vowel F2 for the sound under study are relied upon, because F2 represents the resonant chamber associated with the back of the tongue. Its value decreases with its height and increases with its lowering and the forward movement of its tip. Accordingly, the lower the values, the more luxurious the sound, and the higher they are; The sound was less emphasized or thin, and the following table gives us a representation of the value of F2 when pronouncing the letter seen with a fatha vowel versus the letter sad with a fatha vowel, and the same is the case with the letter dhal versus the letter dhal. We chose these sounds because the distinguishing phonetic feature between each sound and its counterpart is emphasis.

Table No. (01): Table of audio F2 values

/dha/ـَـ/ + /	/dhal/ـَـ/ + /	/sad/ـَـ/ + /	/sin/ـَـ/ + /

1220.1610Hz	1703.0585Hz	1436.7967Hz	1845.0053Hz

We clearly notice that the value of F2 increases with the softened sound /sin/ and decreases with its emphatic counterpart /sad/, and the same is true with /dhal/ and /dha/.

In light of what was previously stated and by referring to Al-Mar'ashi in his analysis of the phenomenon of emphasis, we see him making a comparison between the degrees of emphasis in the emphatic sounds, dividing them into two groups: the group of emphatic sounds and the group of non-emphatic sounds, taking into account the position of the tongue and the organs of speech when producing these sounds. This in itself is evidence of understanding the phonetic behavior, unlike most of those who preceded him, where they make a comparison in a single sound in all its structural states with the vowels. Al-Mar'ashi says in the comparison: "The emphatic letters are more expressive than the rest of the emphatic letters... In short: the degree of emphasis is according to the degree of emphaticity and emphaticity. The silent ta' is the most emphatic of the letters, and since the qaf is more expressive in emphaticity than the voiced ghayn and kha', as you know, it is more emphatic than them." He also says: "...and since the silent ta' is stronger in emphaticity than its sisters; Its emphasis was greater than that of its sisters, as in "Al-Ri'ayah" and "Al-Tamhid." I say: Since "Ṣād" and "Ḍād" are medium in emphasis, as you know, they were also medium in emphasis. And since "Ḍā" is the weakest of the emphatic letters in emphatic articulation, its emphasis was less than that of its sisters. The gist of the matter, according to him, is that the order of the degrees of emphasis in the group of emphatic sounds is: /ṭa/, /ṣad/, /ḍhad/, /dha/. (./ظ/، /ض/، /ص/، /ط/)

He emphasizes that the letter ta' is more emphasized and the letter dhā' less emphasized, with the letters Ṣād and Ḍād between them, without indicating their order.

The order of the degrees of emphasis in the group of non-emphatic, emphatic sounds is/:qaf/, /gḥayn/, /kha./(، /ق/ ./خ/ ، /غ/)

He emphasizes that the letter qaf has the highest emphasis, while the letters ghayn and kha' have the lowest. By referring to the PRAAT program and analyzing the recordings I made previously, we find the following:

Table No. (02): Table of the values of the sound points F1 and F2 for the applied high sounds

second value (F2)	**First value (F1)**	**The silent, lofty one + the short, voweled one**
هرتز 1201.91267Hz	هرتز 582.14830Hz	/ta/ó / + /
هرتز 1449.95674Hz	هرتز 1201.91267Hz	/sad/ó / + /
هرتز 1414.62875Hz	هرتز 505.67686Hz	/dhad/ó / + /
هرتز 1505.37340Hz	هرتز 602.65136Hz	/dha/ó / + /

The table shows the total values for the first and second diacritics. We will focus more on the second diacritical mark, as it is more closely associated with emphasis than the first. What the recording analyses revealed is that the sounds characterized by emphatic diacritics differ in their degrees of emphasis, and that they fully agree with Al-Mar'ashi's analysis, despite its reliance on subjective observation and a sense of taste. The following table shows the values of the diacritical marks for the non-emphatic emphatic sounds:

Table No. (03): Table of the values of the F1 and F2 pitches for the unvoiced, high sounds

Second value (F2)	First value (F1)	The silent, exalted, non-applied consonant + the short vowel
854.9911Hz	561.2018Hz	/qaf/ó / + /
945.5272Hz	553.4845Hz	/kha/ó / + /
971.8825Hz	574.9502Hz	/ghayn/ó / + /

PRAAT analyses of the un-emphasized emphatic sounds show complete agreement with al-Mar'ashi's views on their degrees of emphaticity. We found that the qaf is the most emphatic of them, as it is given the lowest value of F2 compared to the other two sounds.

5.9 Warning against nasalization during prolongation:

In the Arabic phonetic system, nasalization is the sound produced as a result of air rushing from the nasal cavity. It is a characteristic of the sounds /mim/ and /nun/, which is why phoneticians call them nasal sounds. We find Al-Mar'ashi warning against nasalization with the three long vowels, saying: "...and that is why some people pronounce the prolongation accompanied by nasalization in words like 'we seek help' without realizing it. This is a mistake. The way to know if it occurs in such a situation is to pronounce it once while holding your nose and once without. If the prolongation sound differs in the two cases, know that it is accompanied by nasalization." This warning was well-known and well-known before Al-Mar'ashi. However, I did not find anyone who explained the method of knowing this warned vocal performance in singing long vowels in the sources that I read to which Al-Mar'ashi referred. Thus, Al-Mar'ashi shows us the strength of his vocal thought and his deep understanding of the mechanisms of producing Arabic sounds. (al-Mar'ashi, 2008, 311)

6. Conclusion:

In conclusion, the study aimed to highlight the various contributions of scholars of Islamic civilization from outside the Arab region to the study of Arabic at the phonetic level. It focused on the Anatolian region, as it is the region closest to the Arabian Peninsula geographically and the most scientifically dynamic throughout the history of Arab-Islamic civilization. It was also the capital of the Islamic Caliphate. The research paper uses Muhammad ibn Abi Bakr al-Mar'ashi as a model for this significant contribution to Arabic phonetics. The study demonstrated the extent of novelty and innovation that characterized his studies in his book "Juhd al-muqil." We listed a number of results that emerged from this paper, the most prominent of which are:

-Al-Mar'ashi was able to define the boundaries and features of the science of Tajweed and separate them from the features of the science of reading.

-Al-Mar'ashi defined the mechanism of linguistic sound production and clarified, more than his predecessors, the reality of voiced and unvoiced pronunciation. - With his profound ability to understand the position of the articulatory organs, Al-Mar'ashi was able to differentiate between the mechanism of producing the sounds of Ra and Nun. No one else, as far as we know, preceded him in identifying the part of the tongue involved in producing these two sounds.

-Al-Mar'ashi is considered the most prominent figure to distinguish the elevated part of the tongue from the elevated sounds. Most of his predecessors considered elevation to be an ascension of the tongue without further elaboration.

-Al-Mar'ashi understood the reality of emphasis and explained its degrees with great precision. He arranged the sounds according to emphasis and was very successful in dividing the elevated sounds into mutaqabbed and non-mutaqabbed sounds, and the technical analytical results were consistent with his position.

- Al-Mar'ashi explained the method for determining whether a sound is nasalized, and he provided a practical method for doing so, demonstrating his scientific understanding of the positions of the articulatory organs.

Acknowledgment

The author wishes to thank Ali Lounici University of Blida 2, Algeria, for the academic support and resources that facilitated the preparation of this research. Special appreciation is also extended to colleagues in the Department of Arabic Language and Literature for their valuable insights and encouragement during the course of this study.

Conflict of Interest

The author declares that there is no conflict of interest regarding the research, authorship, or publication of this article.

References:

1. Abu Saʿīd al-Sīrāfī. (1966). News of the Basran grammarians (M. A. Khafaji & T. M. al-Zayni, Eds.). Cairo, Egypt: Dar Mustafa al-Babi al-Halabi.
2. ʿUmar, A. M. (1997). A study of linguistic sound (1st ed.). Cairo, Egypt: ʿĀlam al-Kutub.
3. Al-Ḥamad, G. Q. (2007). Phonological studies by Tajweed scholars (2nd ed.). Amman, Jordan: Dar ʿAmmār for Publishing and Distribution.
4. Al-Ḥalīs, Y. (2005). A xeroradiographic, ultrasonic, laryngoscopic, and acoustic study of pharyngeals and emphatics in Arabic. In Proceedings of the 15th International Congress of Phonetic Sciences (ICPhS), Barcelona.
5. Al-Ḥusayn ibn Aḥmad. (2019). Al-Fawāʾid al-shāfiyya ʿalā iʿrāb al-Kāfiya (2nd ed.). Turkey: Dar al-Siraj.
6. Al-Khalīl ibn Aḥmad. (n.d.). Al-ʿAyn (M. al-Makhzoumi & I. al-Samarraʿī, Eds.). Cairo, Egypt: Dar wa Maktabat al-Hilal.
7. Al-Marʿashī, M. ibn Abī Bakr. (2008). Efforts of the poor (Juhd al-muqill) (G. Q. al-Ḥamad, Ed., 2nd ed.). Amman, Jordan: Dar ʿAmmār.
8. Cambridge University Press. (n.d.). Cite. In Cambridge Dictionary. Retrieved July 27, 2025, from https://dictionary.cambridge.org/dictionary/english/cite
9. Al-Sāʿatī, E. ibn Muḥammad. (2000). Amusement of the virtuous with biographies of reciters after the eighth century AH (1st ed.). Beirut, Lebanon: Dar al-Nadwa al-ʿĀlamiyya for Printing, Publishing, and Distribution.
10. Encyclopaedia Britannica. (2025). Phonetics. In Encyclopaedia Britannica.
11. Ibn Jinnī. (n.d.). Al-Khaṣāʾiṣ (4th ed.). Cairo, Egypt: The Egyptian General Book Authority.
12. Al-Baghdādī, I. (1951). Gift of the knowledgeable: The names of authors and works of the compilers. Beirut, Lebanon: Dar Iḥyāʾ al-Turāth al-ʿArabī.
13. Cantineau, J. (1966). Lessons in Arabic phonology (S. al-Qarmadi, Trans.). Tunis, Tunisia: Publications of the Center for Economic and Social Studies and Research.
14. Al-Zarkalī, K. (2002). Al-Aʿlām. Beirut, Lebanon: Dar al-ʿIlm lil-Malāyīn.
15. Ladefoged, P., & Johnson, K. (2010). A course in phonetics (6th ed.). Boston, MA: Wadsworth Cengage Learning.
16. Al-Saʿrān, M. (n.d.). Linguistics: An introduction to the Arab reader (1st ed.). Beirut, Lebanon: Dar al-Nahda al-ʿArabiyya.
17. Kahala, R. (1957). Dictionary of authors (1st ed.). Beirut, Lebanon: Al-Muthanna Library.
18. Istitieh, S. S. (2003). Linguistic sounds: An organic, phonetic, and physical perspective (1st ed.). Amman, Jordan: Wael Publishing House.
19. Al-Dhahabī, Shams al-Dīn. (1997). Knowledge of the great reciters of classes and eras (1st ed.). Beirut, Lebanon: Dar al-Kutub al-ʿIlmiyya.
20. Ibn al-Jazarī, Shams al-Dīn. (2006). The ultimate goal in the classes of reciters (1st ed.). Beirut, Lebanon: Dar al-Kutub al-ʿIlmiyya.

21. Sībawayh. (1988). Al-Kitāb (ʿA. al-Salam Harun, Ed., 3rd ed.). Cairo, Egypt: Al-Khanji Library.
22. Ḥassan, T. (1990). Research methods in language (1st ed.). Cairo, Egypt: Anglo-Egyptian Library.
23. Trask, R. L. (1996). A dictionary of phonetics and phonology. London, England: Routledge.

RESEARCH ARTICLE

The impact of social media use on adolescent upbringing - Facebook as a model - A field study on a sample of students at Al-Shaheed Ben awla Miloud El-Quettar High School

Ahmed Bekheira
Dr.
RELIZANE Unuversity, LESPA Laboratory
Algeria
Email: ahmed.bekheira@univ-relizane.dz

Adelkadir Baghdad Bey
Prof.
RELIZANE Unuversity, LESPA Laboratory
Algeria
abdelkadir.baghdadbey@univ-relizane.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Social Media, Facebook, Socialization, adolescent, Secondary Stage.

Abstract

This study aimed at identifying the reality of secondary-level adolescents' use of social media and as a Facebook model First, by revealing the educational, social and psychological effects of these media on an individual's psyche, Second, determine the impact of social media on the upbringing of individuals in society and to highlight the role of both the family and the school in guiding teachers towards the rational and safe use of these technological media. The study relied on the analytical descriptive curriculum as an appropriate approach to research objectives. The study tools were the questionnaire to collect data, which was applied to a sample of 85 pupils selected in a deliberate manner by Facebook users at Lycee Chaheed Benawla miloud Elguettar.

The study came up with a series of findings, most notably: Facebook is the most important and widely used means for secondary adolescents to meet different educational, educational, recreational,... The study also showed differing effects on the use of Facebook among secondary pupils.

The study came up with a series of proposals: for example, the active role of family and school in accompanying children from technological media users more effectively, to reduce their negative effects.

Citation. Bekheira A., Baghdad A.B. (2025). The impact of social media use on adolescent upbringing - Facebook as a model - A field study on a sample of students at Al-Shaheed Ben awla Miloud El-Quettar. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 120–130. https://doi.org/10.56352/sei/8.11.10

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 29.05.2025 | Accepted: 30.07.2025 | Published: 27.08.2025 (available online)

Introduction:

In the past few years, the world has witnessed a technological boom unprecedented in the entire history of humanity, which has greatly affected individuals as well as societies. The world has become a small village. Modern technologies have contributed to bringing distances closer and shortening time and effort.

Perhaps one of the most important technological aspects of these is social networking sites, which have brought about a qualitative revolution in communication processes and have been imposed on all of humanity, regardless of their types and classes, to convey their ideas and opinions through social interaction between individuals using various technologies and modern means of communication. Gradually, social networking sites, including Facebook, have become an essential part of individuals' lives, and have imposed themselves in all areas of daily life, whether for multiple educational, pedagogical, recreational, cultural, or social uses...

Facebook is considered the most prominent communication network that has been very popular with a large segment of society, including learners in various educational levels, as this medium has become a tool for socializing individuals, due to its daily use, so teenagers who practice their high school education in direct coexistence with it now own pages. Their own, which has resulted in several positive and negative effects in all fields: educational, social, psychological and health Through the daily experience of students as a researcher and school guidance advisor in high school, and according to the exploratory study he conducted, this proposition is confirmed.

If we look at the phenomenon of using Facebook as a modern means of socialization and its effects on individuals, especially when it comes to adolescents (an important group of society) who are distinguished by a set of specific cultural, social, psychological and physiological characteristics that differ from other social groups, especially it must be examined with some explanation and analysis.

Based on the above, this current study attempts to answer the following question:

What are the effects of using Facebook on a teenager's upbringing methods in secondary education?

To answer this main question, sub-questions emerged, which are as follows:

1- What is the reality of teenagers using the social networking site Facebook in Algeria?

2- What are the educational, social and psychological effects of a teenager's use of Facebook?

The importance of the study:

The importance of the current study is highlighted in its treatment of a phenomenon of the modern era that is constantly changing and developing day after day, which is social media - Facebook as an example - and the effects it has and the great effects it has on an important segment of society –adolescents.

The impact of social media on the building of individuals and the formation of their personality, especially with regard to the most targeted group in Algerian society, which is adolescents.

Enriching the research and scientific aspect with a study on adolescents and their impact on these applications.

Study objectives:

To identify the impact of the use of social media (Facebook) in the upbringing of schooled adolescents in secondary school.

To identify the reality of the use of Facebook by adolescents.

Knowing the motives for teenagers - the group of students among them - using social media, especially Facebook.

Revealing the educational, social and psychological effects of a teenager's use of Facebook.

Procedural concepts of the study:

Impact: In the current study, impact means the changes that Facebook brings about in behavior and attitudes, whether positive or negative, on adolescents from the psychological, social, and educational aspects.

- Facebook: One of the applications available on mobile devices or computers, which is used by teenagers studying in secondary school for various purposes.

Socialization: It is a set of values, customs, traditions and trends that are instilled in the child from childhood to the teenage years by social institutions and modern means of communication.

- Adolescents: In the current study, we mean individuals who study in the secondary education stage, and whose ages range between 15-20 years.This study was applied to them of both sexes, males/females, from Al-Shaheed Ben awla Miloud El-Quettar High School.

Previous studies:

1- Al-Khashmi et al.'s study (2023): This aimed to identify the motives for Saudi youth's use of social media networks, and the effects resulting from their use, as the study relied on a social survey, and the study tool was represented in the interview and questionnaire, on two samples, the first a simple random sample of university students (4270 students).), and the second is an intentional sample from the category of young people who do not belong to the university The study concluded that among the positive effects of media exploitation are the diversity of sources of obtaining information, increasing awareness of areas of life, helping to solve some problems, and acquiring new skills.

2- Bin Sheikh's study, Ghawafriya (2021): entitled "The Role of Modern Media of Communication in Socialization," which aimed to identify the role of modern media in socialization.The study found that all modern social media contribute in one way or another to socialization processes, In addition to traditional upbringing institutions, the family, school, and mosques, the socialization process is an integrated, communicative process that requires concerted efforts and cooperation for the sound upbringing of individuals.

3- Al-Fariji Study (2018): Titled "Children and adolescents' use of social networking sites and its impact on their family relationships - an exploratory study.This study aimed to identify the sites most used by children and adolescents, and the negative effects of that.The researcher relied on an intentional sample of 650 children and adolescents from Saudi society use social media on a daily basis, and the study tool was the questionnaire and the observation tool The study found that the majority of daily media users are from stable families and are inside the home, and this is done via mobile phone, and it has positives as well as negatives.

4- Sabti Study (2024): Tagged with "Facebook addiction and its psychological and social effects on adolescents - a field study on a sample of Facebook users (Algerian adolescents as an example)." This study aimed to reveal the psychological and social effects that an excessive or addicted person to social networking sites may have.Specifically, Facebook on adolescents in Algeria, where the researcher relied on the descriptive and analytical approach The Facebook addiction scale and the mental health scale were used, prepared by the researcher.The research sample consisted of 150 teenage Facebook users who were chosen intentionally.The study concluded that addiction to Facebook has psychological effects such as anxiety and stress and social effects such as social withdrawal and isolation.

5- Al-Hashemi et al.'s study (2020): Its title is "The Impact of the Use of Social Media on Child Upbringing in Omani Society," a study submitted by the Omani Social Society to the Ministry of Social Development, in order to identify the reality of the Omani child's use of social media, and reveal its educational and social effects.Psychological and health...The descriptive analytical approach was also adopted, and the study tools were represented in a questionnaire and applied to government school students in three governorates of Omani society Their number reached 2,246 students, and the interview evidence included a sample of social and psychological workers in schools and parents of students involved in the study. The study reached a set of important results, most notably: The educational effects of social media came strongly and first, followed by the social and psychological effects, then the health effects, with difficulties and challenges among specialists and parents in controlling children's use of these means of communication.

The researchers benefited from these local and Arab studies that contributed to studying this phenomenon at the individual and societal levels, as they helped us a lot in crystallizing the research idea, identifying the problem, and setting questions, and also in the methodological framework in choosing the appropriate method, and choosing the field study sample, while designing the study tool.And benefit greatly from its results.

Some observations can also be drawn from these previous studies, which the researcher summarized as follows:

The previous studies they relied on focused on studying the reality and how adolescents use social networking sites in general, especially during adolescence and the psychological, psychological and emotional

characteristics that characterize it...It pushes them to go to the virtual world through these sites, to prove themselves and express what is on their minds and minds.

Previous studies have shown the magnitude of the effects resulting from excessive use of Facebook in particular, and the family's responsibility as an essential party in the socialization of its children.

The current study is distinguished from previous studies in the researcher's attempt to study the impact of technological media in the form of Facebook on the upbringing of teenagers studying at the secondary level from all psychological, educational and social aspects, given that this is the important segment of society that most uses these technological means for various purposes.

The current study also agreed a lot with my current study in its aspect of educational and social effects, and differed from it in terms of psychological and health effects

Use of social media (Facebook) in Algerian society:

Social networking sites as a whole have brought about many changes in lifestyle, whether at the level of individuals or societies.Perhaps Facebook is one of these media that has made a difference, and has become an integral part in the daily life aspects of individuals.We cannot abandon it, especially with regard to the adolescent group, which constitutes The largest part in dealing with various modern techniques and technologies as a result of its peculiarities and way of life Algeria is one of the countries that most uses social media platforms, including Facebook, according to statistics from the annual digital report globally and for Arab countries for the year 2023.

Facebook has contributed to shaping new trends for teenage users in all countries of the world, especially Algeria in particular, as the international consulting agency "Data Reportal" published in its annual report on the Internet and social networks for the year 2023, where the number of Facebook users in Algeria reached about 20.80 million people, which is Equivalent to 75% of the total population of Algeria who are 18 years of age or older (Al-Shorouk website statistics 2023) Facebook is the most accepted and responsive network among segments of society, including young people on the one hand, and the largest social network on the Internet, according to several different studies (Omani Social Society, 2020, p.54).

In the same context, and according to a recent study by Talbi and Rwaq (2023), Facebook is one of the most used sites by students in the secondary stage, and it meets their personal needs and interests, due to its ease of use and its advantage with a set of features and services that allow them to interact, participate, and exchange ideas (Talbi and Rwaq, 2023, p.99).

Field study:

Study Methodology: To achieve the objectives of our study, the descriptive and analytical method was used to identify the reality of secondary school adolescents' use of social media, such as the Facebook model, by revealing the educational, social, and psychological effects that these media have on the individual's psyche

Limitations of the study: The field research for this study was conducted at Al-Shaheed Ben Aoula Miloud El-Quettar High School, Relizane Province, in the second half of the 2023-2024 academic year.

Study sample: The study sample consisted of 85 male and female students in the secondary stage, who were intentionally selected from Facebook users, including 52 female students and 33 male students distributed across the three levels.

Justifications for choosing the field study sample: The adolescent segment is considered the weakest link among members of society, and it constitutes the largest percentage in existence.This age group is the basis for the establishment of societies in the future, and is characterized by specific psychological, physiological, physical and social characteristics... Individually from the rest of the groups, and the social structure as a whole is affected by it, and due to the importance of this segment in society and the external factors and changes that are affected by it, including these technological applications that have invaded homes, and given this group's exact

dependence on Facebook in particular, this instructed us to present a study on the impact of this application.On various educational, psychological and social aspects of a teenager's life.

Study instrument: The questionnaire instrument was applied to the members of the sample selected from high school students, as it consisted of four basic axes and 26 directed/semi-directed questions.

Theme 1: Personal data of the respondents.

Theme 2: The impact of the educational dimension resulting from the use of social media.

Theme 2: The impact of the social dimension resulting from the use of social media.

The second axis: The impact of the psychological and health dimension resulting from the use of social media.

- Statistical processing: The researcher used the statistical program SPSS version 20, and in order to read the results statistically, the statistical processing method used to analyze the results included the following:

1- Summarize the collected data in simple frequency and percentage tables.

Data processing and analysis:

Table No.01. Distribution of the study sample by gender

Gender	Frequency	Percentage
Male	33	38.82%
Female	52	61.17%
Total	85	100%

Table (01) represents the characteristics of the sample by gender, as it becomes clear to us that the highest percentage recorded is due to females at 61.17%, compared to males at 38.82%, and this is completely consistent with the current data on the number of students in Al-Shaheed Ben awla Miloud El-Quettar High School, Relizane Province, which It reached about 541 students in February of the 2023-2024 academic year, including 304 female students, or 56.19% It constitutes the total number of students, and 237 students, or 43.80% (according to the list of students attending at the end of January 2024), and here we notice a sweep of females among the students, and this is due to several reasons, including the increase in female births over males in recent years, and to the positive view of parents towards educating females who They now have many chances of academic and even professional success.

Table No.02: Status of the study sample's use of Facebook by gender variable.

Gender	Total (N)	Rarely	Sometimes	Always	% Rarely	% Sometimes	% Always	% Total
Female	53	6	16	31	11.32%	30.18%	58.49%	100%
Male	33	2	6	25	6.06%	18.18%	75.75%	100%
Total	86	8	22	56	9.30%	25.58%	65.11%	100%

Through the statistical reading of Table 02, it becomes clear to us that the majority of browsers of the Facebook application of both genders are permanently male/female, at a rate of 65.11%, distributed at a rate of 58.49% for females and a rate of 75.75% for males, in contrast to us finding that a rate of 25.58% for both sexes visit the Facebook site sometimes, ranging from 30.18% for females, and 18.18% for males, and in the end we record a small percentage estimated at 9.30% of males and females who browse Facebook rarely, distributed as follows: 11.32% for females, and 6.06% for males.

Therefore, the largest percentage of teenagers studying in the educational institution under study use Facebook permanently on a daily basis, and this permanent and increasing use of the Facebook site in this way by students in the secondary stage may justify the site's availability of characteristics and a set of features that reflect the virtual life of the teenager in This age, considering that this application is the most widespread and widely used among young people, according to the study of Talbi and Riwaq (2023) Considering that Facebook is the preferred destination for its users in this category of this exact educational stage, they share it for various purposes, whether educational, cultural, entertainment, or social...According to the opinions of the respondents.

Our study was in complete agreement with Al-Fariji's (2018) study, which concluded that the majority of media users are on a daily basis and have positives as well as negatives.

Table No.03: Shows the distribution of the study sample according to hours of Facebook use.

Usage Duration	Frequency	Percentage
One hour per day	7	8.24%
Less than two hours	12	14.12%
Two to three hours	41	48.24%
Four hours or more daily	25	29.41%

It is clear from Table (03) that the majority of teenagers studying in the secondary stage spend from 2 hours to 3 hours browsing Facebook sites, reaching 48.24%, followed by those browsing Facebook for a period exceeding 4 hours a day, at a rate of 29.41%, and 14.12% spend less than two hours using the network.Less than those who browse Facebook programs for a period of time less than one hour Perhaps the long period of browsing this site indicates several indicators of the existence of a virtual world that is an alternative for teenagers to their real world, given that this stage is crucial in the lives of individuals and is characterized by a set of physiological, physical, emotional and psychological variables.This application also saves them the trouble of searching and navigating the corridors of libraries, and investigating About information, especially when they are taking semester and official exams, as well as involving it in completing their school work and research This is what we will show in Tables 04-05

The number of hours of use of the Facebook network among teenagers is due to personal priorities, social circumstances, and psychological needs as well.According to a study by Barara and Awfi (2022), it is considered that teenagers find great pleasure in browsing social networking sites, because this network includes sites for entertainment, education, and games as well.And others, which make him feel fun, knowledgeable, and satisfy curiosity (p.161) According to Bouqlouf's study (2018), Facebook is considered the most appropriate haven

that provides its users with a virtual life characterized by fun, seriousness, amusement, entertainment, etc.to benefit from its features and services (Bouqlouf, 2018, p.258).

Table 04: Educational Effects of Facebook Use Among the Study Sample

Items	Agree	%	Neutral	%	Disagree	%	Mean	Std. Deviation	Level
To do homework and conduct research	63	74.1%	10	11.8%	12	14.1%	2.32	0.72	High
For learning and acquiring knowledge	59	69.4%	14	16.5%	12	14.1%	1.65	0.73	High
Self-education and building knowledge base	41	48.2%	5	5.9%	39	45.9%	1.98	0.97	Medium
Discussing lessons with classmates	51	60.0%	13	15.3%	21	24.7%	1.45	0.85	High
Following the latest news	19	22.4%	20	23.5%	46	54.1%	1.40	0.82	Low

It is clear from Table No.04 that the arithmetic averages of high school students' responses to the educational effects of their use of Facebook ranged between (1.40-2.32), and therefore they came between the high, medium, and low levels. The majority of the educational dimension items were at a high level, and this reflects the positive educational role and effects of Facebook among users of the sample under study.

These results agreed with the results of Al-Khashmi et al.'s (2023) study, which concluded that among the positive effects of media exploitation are the diversity of sources of obtaining information, increasing awareness of areas of life, helping to solve some problems, and acquiring new skills.Darasi also agreed with Al-Hashemi et al.'s (2020) study.Regarding the educational effects of social media, which came strongly and ranked first among other social and psychological effects This clearly shows that Facebook has become the basis of the educational learning process for all students, especially at the secondary level, because it adds to their learning path, in addition to removing many of the intractable obstacles that students faced while reviewing or completing research, as a gain of time and effort.

Other studies also included that among the goals of teenagers' use of social networking sites is to browse news and circulate it among friends, especially sports or artistic ones (Labrara and Awfi, 2022, p.163), contrary to what our current study stated.

The researcher explains these results, which relate to the educational effects, to the urgent necessity and strategies that the teenager studying in the secondary stage has begun to use to possess a stock of knowledge and acquire new skills that he exploits in various programmed exams and different situations...Even families have begun to encourage such new mechanisms in their perception of success and academic excellence for their children.No home is devoid of these modern technologies and technologies that facilitate the learning process if they are used properly Several educational platforms have also been established by the Ministry of National Education and by teachers to improve the learning process, facilitate communication between the professor and the learner, and create a digital educational space that helps students access it to review and acquire educational skills and competencies.

Table 05: Social Effects Among the Study Sample Resulting from Facebook Use

Items	Agree	%	Neutral	%	Disagree	%	Mean	Std. Deviation	Level

Making friendships and relationships with others	56	65.9%	11	12.9%	18	21.2%	1.98	0.82	High
Avoiding isolation and withdrawal	53	62.4%	13	15.3%	19	22.4%	1.92	0.83	High
Sharing with family members during religious/national events	39	45.9%	9	10.6%	37	43.5%	1.60	0.95	Medium
Changing daily routine and filling free time	43	50.6%	6	7.1%	36	42.4%	1.55	0.96	Medium
Entertainment and fun with friends	57	67.1%	5	5.9%	23	27.1%	1.86	0.88	

It is clear from Table No.05 that the arithmetic averages of high school students' responses to the social effects of their use of Facebook ranged between (1.98-1.55), and therefore they came between the high and average levels, and the paragraphs that stated "Forming friendships and relationships with others," "Avoid isolation and introversion," and "Entertainment and entertainment with friends" ranked first at a high level.

Referring to the results of this part of the study, which were very consistent with what was confirmed by Maatouq's study (2018), that Facebook contributed greatly to the emergence of virtual friendship relationships, and they extended widely at the expense of real relationships, in an effort to expand the circle of friends, and Facebook did not cause The teenager is isolated or introverted as a result of poor interaction with society (Maatouq, 2018, pp.364-367).

Among the positive things about using Facebook, according to Darbal and Haddad's study (2019), is that it has become a window into the world, expressing opinions, communicating, sharing with friends, and learning about the cultures and traditions of others (Darbal and Haddad, 2019, p.149).

Among the needs most satisfied by secondary school students is entertainment and leisure, and this is what Al-Omari's study (2018) showed, and according to a recent field study by Talbi and Rwaq (2023), the needs of entertainment and leisure are superior to other basic needs.

These technological media, including Facebook, have also contributed greatly to strengthening social relationships and achieving harmony and social cohesion between members of the same family or between friends (Nawadri and Marzqal, 2021, p.103), and this inevitably leads to the teenager satisfying his needs for communication and interaction within his social environment.

Our study differed from the findings of the Sabti study (2024) that addiction to Facebook has social effects such as social withdrawal and isolation.It agreed with other studies that this application contributed significantly to the formation of charity and social relationships, including the study of Al-Khashmi et al.(2023) and the study of Bin Sheikh, Ghawafriya (2021).) and the study of Al-Fariji (2018), and the study of Al-Hashemi et al.(2020).

The researcher attributes these results related to the social dimension, through the Algerian family's ownership of various modern technologies and the exploitation of these digital platforms in their daily interactions and social relationships, and achieving their own satisfactions, as well as the increasing interest of the adolescent group in forming virtual friendships and relationships and expanding them to meet their needs, especially at this age.Which requires more parental monitoring and accompaniment.

Table 06: Psychological and Health Effects Among the Study Sample Resulting from Facebook Use

Items	Agree	%	Neutral	%	Disagree	%	Mean	Std. Deviation	Level
Reducing stress and anxiety	71	83.5%	6	7.1%	8	9.4%	2.29	0.62	High
I suffer from constant pain and headaches	33	38.8%	10	11.8%	42	49.4%	1.26	0.93	Low
Facebook has caused me a decline in eyesight	38	44.7%	7	8.2%	40	47.1%	2.02	0.96	Medium
I feel lethargic and lose appetite when using Facebook	37	43.5%	11	12.9%	37	43.5%	2.00	0.93	Medium
Facebook has caused me neuropsychological disorders (e.g., autism...)	23	27.1%	14	16.5%	48	56.5%	1.10	0.87	Weak

It is clear from Table No.06 that the arithmetic averages of high school students' responses to the health and psychological effects of their use of Facebook also ranged between (2.29-1.10), and therefore they came between the high, medium, low, and weak levels as well, as the paragraph that states "reducing stress and anxiety" ranked First with an arithmetic average (2.29), and the paragraph that states "Facebook caused me neuropsychiatric disorders such as autism" ranked firstIt ranked last and at a weak level with an arithmetic average of (1.10).

These results can be extrapolated to the fact that Facebook has become a means of relieving stress and all forms of stress and anxiety for all social segments, including teenagers, as they are the most important group that uses the Facebook network, and it may cause a seizure Anxiety and stress among another group of adolescents if the rate of daily use increases, and this is what was revealed by several different university studies conducted in several countries (Burney, 2018, p.230)

The latest results were completely different from what Khudair's (2018) study showed, that social networking sites, including Facebook as well, expose teenagers to some neurological diseases such as personality diseases and vanity...As a result of continuous browsing of it (Khudair, 2014, p.411), and this was also confirmed by the study of Koussa and Bin Qasimi (2019) that excessive use of Facebook negatively affects the psychological life of the teenager and causes him insomnia, depression, and addiction (p.28), and through addiction to some Facebook sites that The teenager resorts to it directly to satisfy their desires, fulfill their needs, and satisfy their curiosity as a result of precious social and family frustrations My study differed in its psychological dimension from what Sabti's (2024) study concluded that addiction to Facebook has psychological effects such as anxiety and stress.

As an explanation for the results drawn about the health and psychological effects that Facebook causes in the life of teenagers, they were negative, as specialists in sociology, psychology, and doctors began to criticize the consequences of excessive use of these media, including Facebook, which has become a threat to their health lives, such as blindness, lack of vision, and pain.Neck....And mental illnesses such as autism, introversion, sleep disorders, anxiety, and stress...This confirms the essential role assigned to parents for continuous and accurate follow-up of their children.

Conclusion:

Social networking sites are considered the networks that have provided individuals with the most wide spaces for learning, acculturation, and social interaction.Perhaps Facebook is one of these networks that has spread terribly among young teenagers, especially in school settings.This, due to several social, educational, and

cultural considerations, has naturally brought about a major change in their lives.Personality and their way of living and thinking In our study, we have tried to determine the most important educational, social, psychological, and health effects of Facebook on the upbringing of the teenager studying in the secondary stage.The results obtained showed differences in terms of impact, which in their entirety were primarily in favor of the educational dimension.This is of course because this target group in the study is from Among the students in the educational institution, it has educational and learning needs and interests, as I explained previously As for the social dimension, it is also no less important than the educational dimension, as it is one of the priorities of adolescents in forming virtual relationships and friendships and spending their free time exploiting Facebook, which has become part of their daily lives.As for the health and psychological effects of exploiting Facebook and what it has on the adolescent's health, the study indicated a number of Recommendations we mention include:

The necessity of coordination between the family and the school and the necessity of opening channels of dialogue between them regarding the lives of children, taking care of their concerns and interests, following up on them at home and abroad, and allocating specific times for the use of digital platforms.

Raising awareness and sensitizing to the danger of social networking sites as a whole and Facebook in particular to the health and psychology of adolescents concerns all actors and social partners.

Activating the role of school media to educate learners about the danger of excessive exploitation of Facebook.

Contributions of the Association of Parents and Civil Society Actors to raising awareness and reminding parents and their children of the negatives of social platforms and how to confront them.

Inclusion of a new information material in educational programmes and curricula concerned with the study of the modern interests of adolescents, particularly with regard to those technological sites and how they can be exploited.

Improving the student's academic climate, giving him space to express his interests and concerns, and employing cultural and sports clubs to his advantage to extract his stacks and eliminate free time.

References:

1. Al-Khashmi, Jawaher bint Saleh, Al-Assaf, Abdullah bin Abdul Mohsen, bin Junaid, Muhammad bin Yahya (2023): The impact of social media networks on youth in Saudi society - a field study on a sample of young people, Riyadh: Journal of Social Research and Studies - National Center for Studies and Research Social, Volume 3, Issue 1, pp.142-188
2. Al-Hashemi, Sultan bin Muhammad, Saeedia, Ziana bint Abdullah, Al-Ghafriya, Jalila bint Rashid, Al-Saadia, Alia bint Hilal, Wadhaa, bint Shams Al-Kayoumiya, --Al-Khaziriya, Rayya bint Sulaiman (2020): The impact of the use of social media on child upbringing in Omani society (Educational, social, psychological, health), Omani Social Society, Ministry of Social Development.
3. Al-Omari, Abdul Rahman (2018): Social dimensions of adolescents' uses of social media - a descriptive study on a sample of high school students in Jeddah, King Abdulaziz University Journal: Arts and Humanities, Volume 26, Issue 03.
4. Al-Fariji, Riyad bin Nasser (2018): Children and adolescents' use of social networking sites and its impact on their family relationships - an exploratory study, Riyadh: Publications of Al-Mawaddah Society for Family Development.
5. Bin Shih, Raziqa, and Ghawafriya, Rashida (2021): The role of modern means of communication in socialization, Journal of Social Studies and Research, Volume 9, Issue 3, pp.165-175
6. Burney, Nassim (2018): Social networking sites and their impact on adolescents, Journal of Human Sciences, Oum El Bouaghi University, Volume 05, Issue 02
7. Bouklouf, Siham (2018): The use of social networking sites and their impact on moral and social values, a survey study of a sample of Algerian teenagers using Facebook, a thesis submitted to obtain a third-year doctorate in media and communication sciences, Algeria: Faculty of Media and Communication Sciences, Department of Communication Sciences.
8. Khudair, Yas (2014): New Media, the New Virtual State, United Arab Emirates: Dar Al-Bedaya.

9. Darbal, Sarah, and Haddad, Sonia (2019): The repercussions of social networking sites on adolescents, Journal of Social and Human Sciences, Volume 12, Issue 01
10. Sabti, Siham (2024): Facebook addiction and its psychological and social effects on adolescents - a field study on a sample of Facebook users (Algerian adolescents as an example), Journal of Educational Sciences, Volume 5, Issue 1, pp.77-98
11. Talebi, Naima, and Rwaq, Hamoudi (2023): The reality of using social networking sites among secondary school students, Algerian Journal of Research and Studies, Volume 06, Issue 01
12. Zucchini, Fatima Al-Zahra, Bin Qasimi, Dhawiya (2019): The effect of using the social networking site (Facebook) on self-esteem among adolescents (15-19 years old), Journal of Mental Health and Neurosciences, Volume 01, Issue 02
13. Labrara, Hala, and Awfi, Mustafa (2022): The effect of using social networking sites on the behavior and personality of adolescents, Journal of Human Sciences and Society, Volume 11, Issue 01
14. Nawadri, Farida, and Marzqal, Ibrahim (2021): Social media and its impact on the socialization of the child - the smartphone as a model -, Journal of Research and Studies in New Media, Volume 2, Issue 3.

RESEARCH ARTICLE

The Impact of Using Information Technology in Internal Auditing on the Quality of Financial Report: A Field Study on a Sample of Economic Entities in Algeria

Akachat Hayet
Doctor (PhD)
Faculty of Economics, Commercial and Management sciences, University of Constantine 2 Abdelhamid Mehri
Algeria
Email: akachat.hayet@univ-constantine2.dz
ORCID: 0009-0007-8890-5523

Lakhal Fatima Zohra
Doctor (PhD)
Faculty of Economics, Commercial and Management sciences, University of Constantine 2 Abdelhamid Mehri
Algeria
Email: fatimazohra.lakhal@univ-constantine2.dz
ORCID: 0009-0009-7562-6239

Dafri Rima
Assistant Professor
Institute of Economics, Commercial and Management sciences, University Center of Abdelhafid Boussouf Mila
Algeria
Email: dafri.r@centre-univ-mila.dz
ORCID: 0009-0004-0591-2938

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Information Technology, Internal Audit, Financial Reporting Quality, ERP Systems, Data Analytics.

Abstract

This study aims to examine the impact of using information technology (IT) techniques in internal auditing on the quality of financial reporting in a sample of economic entities in Algeria. To achieve this objective, the research adopts a mixed-method approach, combining a questionnaire and semi-structured interviews to ensure a comprehensive analysis. Quantitative data were collected through a survey of 99 employees working in internal audit departments across 30 economic entities, while the qualitative dimension relied on interviews with three internal auditors to capture practical insights. Path analysis using the partial least squares structural equation modeling (PLS-SEM) approach in SmartPLS 4 was employed to test the hypotheses. The findings reveal a significant positive impact of IT use (particularly ERP systems and data analysis tools) on both internal audit effectiveness and the quality of financial reporting. However, the mediating role of internal audit between IT use and financial reporting quality was not supported. Furthermore, the absence of audit committees, limited management support, lack of advanced IT tools, and the failure of boards of directors to fully implement internal audit recommendations weakened the contribution of internal audit in enhancing financial reporting quality. The study recommends strengthening auditors' IT competencies, establishing audit committees, ensuring the execution of audit recommendations, and investing in modern technological tools to reinforce internal audit effectiveness and financial reporting quality.

JEL Classification: M41, M42, C83, O33

Citation. Hayet A., Lakhal F.Z., Dafri R. (2025). The Impact of Using Information Technology in Internal Auditing on the Quality of Financial Report: A Field Study on a Sample of Economic Entities in Algeria. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 131–156. https://doi.org/10.56352/sei/8.11.11

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 29.05.2025 | Accepted: 30.07.2025 | Published: 28.08.2025 (available online)

1. Introduction

Today, the world is witnessing an increasing development in the role played by modern technologies in various aspects of economic and social life at the national level. It is evident that technology in this era is no longer an option but has become a fundamental work strategy that must be integrated into all aspects of the entity in order to achieve progress and growth. It is now widely acknowledged that information technology constitutes a vital and effective tool on which entities, whether public or private, rely to carry out their activities efficiently, while achieving high levels of speed and accuracy in performance.

Information technology has emerged as an advanced field of knowledge aimed at employing computers and modern communication systems in the processes of collecting, processing, storing, and transmitting diverse data, including audio, visual, textual, and digital content. The philosophy of this field focuses on the optimal use of advanced devices and techniques to transform raw data into strategic insights and documented evidence that enable administrative leaders to formulate sound and effective decisions (Salehi & Husini, 2011). Its development is constantly changing and advancing rapidly, affecting all business activities, to the extent that it has become impossible to separate any activity from information technology (Alkebsi & Aziz, 2017).

With the acceleration of technological development, all industrial sectors are now required to master information technology to ensure their sustainability and growth. At the forefront of these is the auditing field, which has undergone a fundamental transformation in its methodologies and working practices under the influence of these modern technologies. The effectiveness of internal auditing is measured by its ability to contribute positively to improving the quality of services provided and achieving the strategic objectives of the entity. Accordingly, internal auditing seeks to ensure the optimal use of available resources by providing reliable assurances and specialized consulting aimed at enhancing operational processes and strengthening corporate governance (Ayab et al., 2023). Internal auditors thus need to acquire knowledge and skills related to computerized information systems for purposes of planning, supervision, guidance, reviewing completed work, and reducing the time spent on testing the content and accuracy of accounts (Marwanto & Soepriyanto, 2025).

Moreover, information technology and internal auditing represent essential pillars for improving the quality of financial reports, whether in their traditional form or through various tools such as ERP systems and data analytics that raise the level of accuracy and transparency. Financial reports are the final output of the accounting process, used to assess entities' performance, evaluate their financial position, and identify sources of cash flows and changes in capital, thereby assisting in making sound decisions (Mohamed, 2018). A financial report also represents the process of publishing the official records of the entity's financial activities. For reports to be more effective and easier to use, they must take into consideration specific characteristics, namely: relevance, reliability, comparability, understandability, and consistency (Sina et al., 2021).

• Problem Statement

The interactive relationship between information technology and internal auditing plays a fundamental role in enhancing the quality of financial reports. Accordingly, understanding the integration between information technology and internal auditing has become a strategic necessity for improving the quality of financial reports and achieving sound financial governance within economic entities, particularly in light of the increasing challenges related to transparency and accountability. Based on this, the following main research question can be raised:

How does the use of information technology techniques in internal auditing affect the improvement of financial report quality?

• Significance of the Research

The significance of this research stems from the growing recognition that traditional auditing approaches may no longer suffice in today's digitally-driven business environment. While numerous studies have examined information technology adoption in various organizational contexts, there remains a notable gap in understanding how IT integration specifically

influences internal auditing effectiveness and, consequently, financial reporting quality within the Algerian economic landscape. This study addresses this void by providing empirical evidence from Algerian entities, where the regulatory framework and technological infrastructure present unique challenges and opportunities. Moreover, the study's relevance is particularly pronounced given Algeria's ongoing economic diversification efforts and the government's emphasis on improving transparency in both public and private sectors.

• **Research Objectives**

This research aims to achieve the following interconnected objectives:

- To examine the effect of using information technology techniques on the quality of financial reporting in economic entities;
- To investigate the impact of information technology techniques on the effectiveness of internal audit functions;
- To analyze whether the effectiveness of internal audit mediates the relationship between information technology techniques and the quality of financial reporting;

- To identify the organizational and structural factors that influences the relationship between internal audit and financial reporting quality.

• **Research Methodology**

This research adopts a mixed-method approach, combining a questionnaire and semi-structured interviews to ensure comprehensive analysis. The quantitative data were collected through a survey of 99 employees of internal audit departments in 30 economic entities in Algeria, while the qualitative dimension relied on interviews with 3 internal auditors to capture practical insights. Path analysis was used to test the relationships among the study variables, supported by the interview results that provided contextual explanations.

• **Research Structure**

Following the introduction, which establishes the research context and objectives, this paper presents a comprehensive literature review and hypothesis development section that examines existing scholarly work and formulates testable research propositions. The methodology section then outlines the research design, data collection procedures, and analytical techniques employed in the study. Subsequently, the results section presents the empirical findings and hypotheses testing, followed by the discussion section, which interprets these findings, addresses their implications, and considers their relationship to existing literature. Finally, the conclusion synthesizes the key contributions of the research, acknowledges limitations, and suggests directions for future investigation.

2. Literature Review and Hypothesis Development

This section reviews the prior literature related to the research problem, with a focus on a set of empirical studies that addressed multiple relevant dimensions. These studies discussed information technology techniques, factors of internal audit effectiveness, and the quality of financial reports. The analysis of these studies contributed to building the theoretical framework of the present study and subsequently to the formulation of its hypotheses.

2.1 Information Technology Techniques and Internal Auditing

The relationship between information technology and the internal auditing function has received significant attention in recent studies, due to the variety of determinants influencing the effectiveness of this connection. According to Chi et al. (2024), the impact of information technology techniques on internal auditing can only be realized under certain fundamental conditions, most notably the independence and competence of internal auditing and effective managerial support. Based on these determinants, studies that first focused on effectiveness through managerial support and internal auditor competence will be discussed, followed by studies addressing the impact of using information technology techniques on the effectiveness of internal auditing.

Both Ayab et al. (2023) and Saeed et al. (2022) agreed that managerial support enhances the effective use of information technology techniques in internal auditing within a sample of economic entities in Jordan and Ethiopia. Managerial support was considered a moderating factor in the relationship between the use of information technology techniques and the effectiveness of internal auditing, through management's commitment to facilitating technology adoption and providing modern tools that improve internal audit effectiveness. In contrast, Marwanto and Soepriyanto (2025), in a study conducted in Indonesia, reported different results: managerial support did not register any moderating effect, even though the sample expressed positive evaluations of IT's role in improving their work. The study attributed this outcome to the lack of training of internal auditors, weak management commitment to training, and the limited exploitation of available technological capabilities.

Other studies focused on internal auditor competence as a moderating factor between information technology and internal audit effectiveness. Chi et al. (2024) highlighted that the positive impact of modern technologies cannot be realized without auditors possessing the necessary skills and knowledge to use auditing tools effectively. This finding was supported by Doda and Murthy (2025), who emphasized the importance of developing internal auditors' competencies in mastering IT tools to keep pace with the rapidly changing business environment.

As for the technologies applied in internal auditing, Salur and Kattar (2021) investigated the impact of ERP systems on auditing functions in the context of modern information technology. Based on findings from prior research conducted in Turkey, they concluded that the benefits of applying ERP systems in auditing far outweigh their drawbacks, provided that auditors possess the academic and practical training required to use the system effectively. Wahdan and El-Serafy (2020) supported this conclusion by highlighting ERP's advantages in internal auditing, such as reducing audit costs, minimizing the possibility of errors during data examination, speeding up processing, and increasing accuracy in detecting issues as they arise. Similarly, Silva and Marques (2022), in a study conducted in Portugal, found a direct relationship between the effective use of ERP systems and the academic and practical qualifications of internal auditors. Without sufficient expertise and proper academic background, ERP systems cannot be used effectively. Extending their work, Silva et al. (2023) conducted a second study on the same sample, concluding that ERP use positively influences the effectiveness and efficiency of internal auditing, with auditors expressing overall satisfaction with such systems.

Regarding data analytics systems, Si (2022) examined their impact, noting that their use is not limited to improving data quality but also extends to accelerating audit procedures, allocating resources more accurately, and expanding audit coverage. Al- Khasawneh and Baniata (2024), studying Jordanian banks, showed that relying on simple data analysis tools such as Excel and spreadsheets significantly contributed to conducting analytical procedures and detailed testing, which positively reflected on internal audit performance.

Based on the above, it becomes clear that the use of information technology techniques can contribute to strengthening the effectiveness of the internal auditing function. However, this impact remains contingent upon a set of organizational and human factors. Accordingly, the following hypothesis can be formulated:

H1: There is a positive and statistically significant effect of using information technology techniques on the effectiveness of internal auditing.

2.2 Information Technology and Financial Reports Quality

Many recent studies have shown a general consensus on the vital role that information technology plays in improving the quality of financial reports, as this relationship represents a key axis in the development of accounting information systems and in achieving transparency and accuracy in financial disclosure. In this context, an applied study conducted in the Indonesian public sector found a strong and statistically significant positive relationship between information technology and the quality of financial reports. The use of such systems contributed to reducing errors, accelerating the reporting process, and enhancing the level of transparency and reliability (Rachmad et al., 2024). These results are consistent with the findings of Darwis et al. (2023), who linked IT techniques with organizational factors such as control and human resources, stressing that technology is not effective on its own, but its impact grows stronger in a well-structured organizational environment. Supporting this direction, Mardinan et al. (2018) emphasized the importance of integrating IT with internal control, noting that enhancing reliability and accuracy in reporting can only be achieved in the presence of precise and effective control tools. Conversely, Salehi and Torabi (2012) found that IT enhances the relevance of

accounting information but reduces its reliability; it also slightly increases comparability and contributes to mitigating the negative effects of existing constraints on the qualitative characteristics of accounting information.

According to Sina et al. (2021), there are several dimensions to financial reporting quality, such as relevance, reliability, comparability, and understandability. Technology contributes to improving the quality of companies' financial reports by using IT tools—computers, devices, and software—to support effective decision-making at both strategic and operational levels. While IT use in accounting systems was limited in its early stages, today it has evolved into a broader field supporting ERP systems with business intelligence applications. Meliana and Ansar (2021) found that ERP plays a strategic role in integrating corporate data and reducing operational errors, while producing comprehensive reports that meet both financial and managerial needs, thus enhancing the quality and efficiency of decision-making. Barna et al. (2021) reinforced these findings, classifying ERP systems as a logical development of IT and emphasizing that their optimal effectiveness depends on appropriate organizational support and technically skilled human resources. Such conditions enable ERP systems to reinforce principles of transparency and institutional accuracy.

E'leimat et al. (2023) argued that data analytics represents a qualitative shift in detecting accounting anomalies and improving the accuracy of outputs, in addition to providing real-time analyses based on massive datasets, thereby contributing to more objective decision-making. Mhlanga (2024) further highlighted that integrating data analytics with artificial intelligence and blockchain in reporting systems enhances transparency and trust while limiting accounting manipulations, especially in environments with weak oversight.

The majority of studies emphasize the pivotal role of IT, whether in its traditional form or through its tools, in improving the quality of financial reports. However, this role remains conditional upon a strong institutional structure, including effective internal controls, continuous managerial support, and technically qualified personnel. While ERP is considered an integrative tool with broad strategic impact, data analytics represents a transformative shift that fundamentally improves the accuracy and transparency of reports. Therefore, combining these tools and applying them within a framework of sound governance represents the optimal path toward achieving high-quality financial reporting. Based on these findings, the following hypothesis can be formulated:

H_2: There is a positive and statistically significant effect of using information technology techniques on the quality of financial reports.

2.3 Internal Auditing and Financial Reports Quality

Several studies have shown that the effectiveness of internal auditing is one of the factors influencing the quality of financial reports; however, this impact cannot be realized in isolation from supporting factors. Riyanto and Rapina (2024) identified these supporting factors as compliance with professional standards, the role of the internal auditor in internal control, risk management and governance evaluation, in addition to the presence of audit committees within the entity. This was confirmed by Ebimobowei and Joyce (2024), who clarified that audit independence and the evaluation of control and risk systems are among the most influential determinants, and that the presence of audit committees acts as a moderating factor enhancing this relationship. Similarly, Abbas (2024) found a positive relationship between compliance with professional internal audit standards and the quality of financial reports in a study of three Iraqi banks, where such compliance contributed to achieving the main quality characteristics of relevance and reliability.

In this context, Sari et al. (2024) indicated that reliability improves when risks surrounding financial reports are properly identified and addressed. Meanwhile, both Riyanto and Rapina (2024) and Qadri (2025) argued that achieving relevance is linked to entities' investments in training and developing auditors, as well as adopting digital transformation in auditing and control activities, which contributes to improving accuracy and efficiency in internal work and thus enhances financial report quality.

While most studies stress the significant role of internal audit effectiveness factors in improving financial report quality, Adewara et al. (2023) reported that independence and competence did not affect financial report quality in Nigeria's public sector, as internal auditors suffered from weak independence, which negatively impacted their performance efficiency. Similarly, Bakri et al. (2025) reached the same conclusion, finding that although competence and independence are factors of internal audit effectiveness, they did not show any impact on financial reporting quality. They explained this

by noting that the auditors' role was limited to reviewing work plans without conducting a comprehensive review of financial statements, which resulted in the absence of the expected positive impact.

In light of the above, it becomes evident that internal audit effectiveness impacts financial report quality only through a set of organizational and professional factors, such as independence, compliance with standards, and the presence of audit committees. Accordingly, the following hypothesis can be formulated to measure the nature of this effect:

H₁: There is a positive and statistically significant effect of internal audit effectiveness on the quality of financial reports.

2.4 Information Technology Techniques, Internal Auditing, and Financial Reports Quality

Internal auditing has undergone remarkable development over time, both in terms of standards and independence, especially with the emergence of digital transformation, which has enhanced its effectiveness, particularly in areas such as control, risk assessment, and governance, in improving the quality of financial reports. Internal auditing is considered one of the essential pillars for ensuring the credibility of financial information and its proper disclosure.

In this context, numerous studies have agreed that the use of information technology techniques by internal auditors contributes to improving audit effectiveness and thereby increasing its role in enhancing financial report quality. Mohamed et al. (2022) found a positive relationship between internal audit effectiveness and financial report quality in the context of digital transformation, through its role in control, risk management, and strengthening governance. Internal auditors were able to prepare accurate reports that enhanced the reliability and relevance of financial information. Similarly, Nhial et al. (2025) confirmed that adopting IT techniques enables auditors to improve report quality by enhancing its secondary characteristics, such as comparability and understandability. These techniques contribute to unifying and harmonizing data, providing accurate and easily interpretable financial information for users.

The literature indicates that IT techniques enhance the effectiveness of internal auditing, which in turn positively affects the quality of financial reports. Hence, the study's main hypothesis can be formulated to test this triangular relationship:

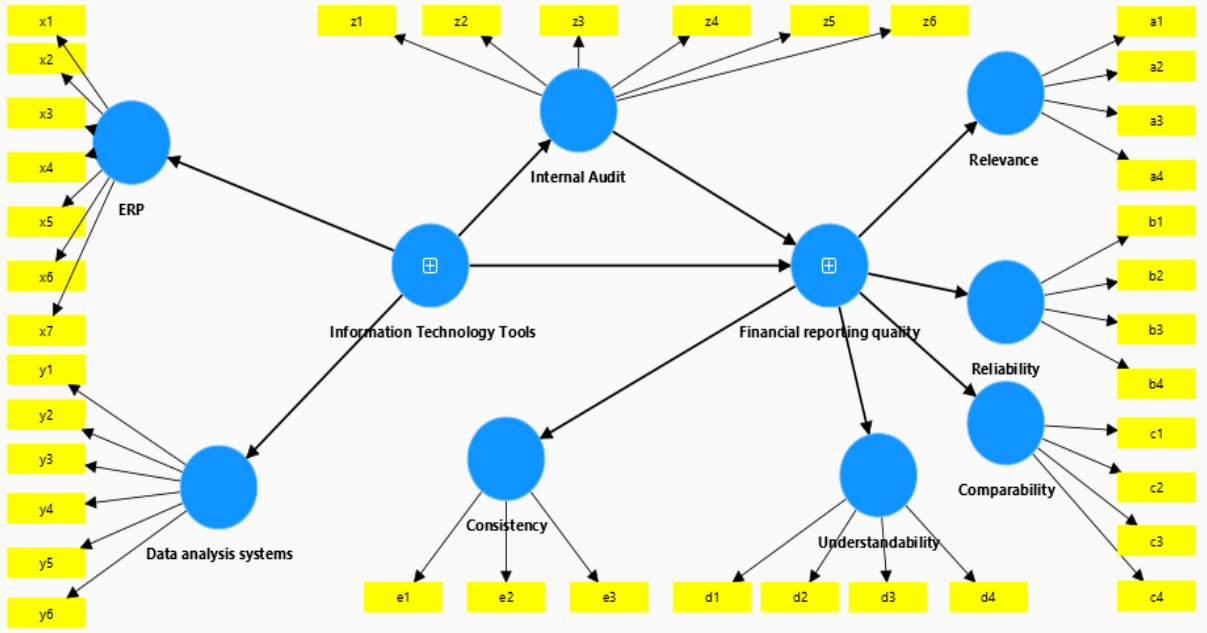
H₂: There is a positive and statistically significant effect of using information technology techniques in internal auditing on the quality of financial reports.

3. Methods

3.1 Model and Definition of Variables

The study adopted an analytical-exploratory approach by applying Structural Equation Modeling using the Partial Least Squares method (SEM-PLS) through the SmartPLS 4 software. The aim was to examine the effect of using information technology techniques in internal auditing on the quality of financial reports within a sample of economic entities in Algeria. The preliminary model of the study was developed based on previous literature, as illustrated in figure 1.

Figure 1. Study's Initial Model



Source: Authors based on SmartPLS 4 software outputs.

The model illustrates the path coefficients linking all the study variables, as well as the paths connecting each variable to its indicators. The study variables are divided into independent, dependent, and mediating variables, as shown in Table 1.

Table 1: Description of Study Variables

Variable	Type	Description
Information Technology Techniques	Independent Variable	Comprises two dimensions, namely Enterprise Resource Planning (ERP) systems and Data Analytics systems, which were used to measure their impact on both internal auditing and the quality of financial reports.
Internal Auditing	Mediating Variable	Consists of a set of items related to the extent of the auditor's use of the techniques adopted in the study, aiming to determine the level of influence on the effectiveness of the function.
Quality of Financial Reports	Dependent Variable	Comprises five dimensions representing the primary and secondary qualitative characteristics: relevance, reliability, comparability, understandability, and consistency. These were established to measure the quality level of financial reports.

Source: Authors

3.2 Research Population and Sampling Strategy

The study population consists of all economic entities in Algeria that have an internal audit department. The sample was selected in a semi-purposive manner and included 30 economic entities. The questionnaire was distributed electronically to the study sample through LinkedIn messaging and email correspondence. A total of 120 questionnaires were distributed to employees of internal audit departments, of which 105 were retrieved. After reviewing and screening them,

99 questionnaires were found valid for statistical analysis. The sample comprised heads of internal audit departments, senior internal auditors, and assistant internal auditors.

The respondents' demographic profile is presented in table 2.

Table 2: Distribution of the Sample According to Demographic Variables

Demographic Variables	Category	Frequency
Job Position	Head of Internal Audit Dept.	48
	Senior Internal Auditor	36
	Assistant Internal Auditor	15
Educational Qualification	Bachelor's Degree	26
	Master's Degree	55
	Magister	12
	Doctorate	5
	Other	1
Years of Professional Experience	Less than 5 years	17
	5 to 10 years	22
	11 to 15 years	23
	More than 15 years	37
Field of Specialization	Accounting	19
	Auditing	42
	Finance	34
	Other	4

Source: Authors based on the questionnaire's results

The study sample demonstrated in Table 2 consisted of 99 internal audit employees from 30 economic entities. The majority were heads of internal audit departments (48) and senior internal auditors (36). Most respondents held a Master's degree (55), followed by a Bachelor's degree (26), with professional experience largely exceeding 10 years (60). In terms of specialization, auditing (42) and finance (34) were the most represented fields.

Moreover, interviews were conducted with three economic entities, namely:

- El Hadjar Iron and Steel Complex: The largest iron and steel complex in Algeria, established in 1969. It is an industrial entity located in Annaba, in eastern Algeria;

- Ooredoo: A service-oriented entity founded in 1997 under the name Wataniya Telecom, later renamed Ooredoo after the Qatari Ooredoo Group acquired the majority stake;
- ASROUT (Road Network Maintenance and Sanitation Company): An entity of an industrial and commercial nature, headquartered in Algiers. It was established in 1995 and specializes in road works and sanitation.

3.3 Data Collection Instruments and Procedures

The study relied on the questionnaire as the primary tool for data collection, which was distributed electronically to the study sample. The questionnaire consisted of two main sections:

- A section on respondents' personal information.
- A section on the main themes of the study, represented by three axes corresponding to the study variables. Each axis included a set of dimensions measured using a five-point Likert scale (the survey instrument is included in the appendices).

In addition, a secondary tool was employed to support the findings, namely the interview, which was conducted with heads of internal audit departments in the aforementioned entities. The interview form contained three main questions:

- Based on your professional experience, what are the factors influencing the internal audit function?
- What programs and technologies are used within your entity that contribute to improving the quality of internal auditors' work?
- How can an internal auditor who relies on modern programs available within your entity enhance disclosure and transparency in financial reports?

3.3 Data Analysis Technique

The data from the 99 valid questionnaires were analyzed using Structural Equation Modeling (SEM) via the Partial Least Squares (PLS) approach, operationalized in the SMARTPLS 4 software. PLS-SEM was selected for its suitability for predictive research models with complex relationships and multiple latent variables. The analysis was conducted in three stages:

- Assessment of the Measurement Model: Evaluating the reliability and validity (convergent and discriminant) of the constructs.
- Assessment of the Structural Model: Examining the predictive power and relationships between the constructs.
- Hypothesis Testing: Evaluating the statistical significance of the path coefficients to test the study's main hypotheses.

4. Results

4.1 Assessment of the Measurement Model

The assessment of the measurement model is considered the first step in Structural Equation Modeling using the Partial Least Squares method (PLS-SEM). At this stage, convergent validity, internal consistency, and discriminant validity are verified. The results of these assessments are presented in Tables 3 and 4.

Table 3: Convergent Validity and Internal Consistency

Dimensions of the study	CR	Rho a	Rho c	AVE
Enterprise Resource Planning	0.815	0.818	0.867	0.521
Data Analysis systems	0.747	0.772	0.835	0.511

Internal Audit	0.852	0.852	0.889	0.572
Relevance	0.813	0.812	0.877	0.641
Reliability	0.877	0.890	0.916	0.732
Comparability	0.911	0.913	0.938	0.790
Understandability	0.901	0.904	0.931	0.772
Consistency	0.869	0.887	0.920	0.793

Source: SmartPLS 4 software outputs

The results of the table 3 can be interpreted as follows:

- **Convergent validity**: The primary objective of this test is to examine the level of consistency among the questionnaire items. To achieve this, indicator reliability was assessed, which requires each indicator's loading value to exceed 0.7. This condition was not met for indicators Y2 and X6, which necessitated their removal to improve composite reliability. In addition, the Average Variance Extracted (AVE) test was used, which requires all values to equal or exceed 0.5. According to the results of the table, all latent variables recorded values greater than 0.5, indicating that each dimension is capable of explaining more than half of the variance in its associated indicators. Therefore, it can be concluded that convergent validity is achieved in the model.
- **Internal consistency:** Internal consistency is assessed using two main indicators: Cronbach's Alpha and Composite Reliability. The results show that all Cronbach's Alpha values exceeded the 0.6 threshold, ranging between 0.747 and 0.911. These are acceptable and strong values that reflect a high level of internal reliability. Similarly, Composite Reliability values exceeded the 0.7 threshold, allowing us to conclude that all latent variables demonstrate a good level of reliability.

Table 4 : Fornell-Larcker Test

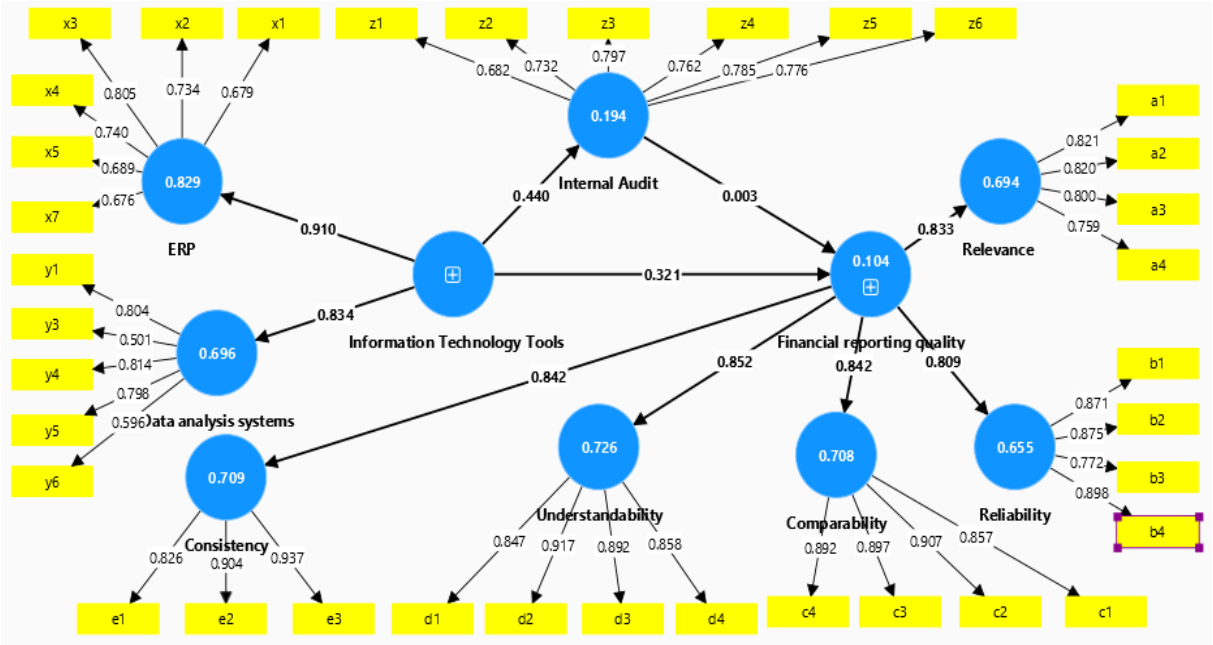
	COM	CON	DAS	ERP	IA	REV	REL	UNDE
COM	0.889							
CON	0.616	0.890						
DAS	0.187	0.193	0.715					
ERP	0.435	0.286	0.532	0.722				
IA	0.112	0.130	0.399	0.360	0.757			
REV	0.651	0.647	0.123	0.211	0.202	0.800		
REL	0.604	0.622	0.145	0.285	0.065	0.559	0.855	
UNDE	0.601	0.684	0.081	0.261	0.106	0.656	0.597	0.879

Source: SmartPLS 4 software outputs

The results of Table 4 show that each latent variable in the model represents itself with the highest value in the Fornell-Larcker criterion. For example, the ERP system variable achieved a value of 0.722 with itself, which is the highest value either across rows or columns, indicating its correlation with the other latent variables. Similarly, each of the other dimensions records the highest correlation value with itself compared to the remaining variables. This confirms that each dimension enjoys a clear degree of distinctiveness from the others, thereby meeting the requirement of discriminant validity according to the Fornell-Larcker criterion.

Through the evaluation of the reflective measurement model of the study, it is evident that the data are valid and reliable, and that the remaining indicators are appropriate for addressing the research problem and testing its hypotheses. After evaluating and verifying the measurement model, the general model of the study was reached, which will be relied upon in analyzing the structural model and testing the hypotheses, as represented in Figure 2.

Figure 2: The General Structural Model of the Study



Source: SmartPLS 4 software outputs

Figure 2 illustrates the general model after removing two statistically insignificant indicators in order to enhance internal consistency and test the Average Variance Extracted (AVE). After verifying the reflective measurement model evaluation tests, the study can proceed with analyzing the structural model and testing the hypotheses.

4.2 Structural Model Analysis

After completing the analysis of the reflective measurement model and ensuring the validity and reliability of the model in measuring the variables, the next step is to analyze the structural model. This stage aims to test the hypotheses by evaluating the path coefficients and examining their statistical significance, in addition to studying the Variance Inflation Factor (VIF) and estimating the effect sizes among the variables.

- **Variance Inflation Factor (VIF):** Before testing the coefficients of the structural model, it is necessary to examine multicollinearity to ensure that the results are not biased. This step is complementary to the evaluation of the reflective measurement model. The VIF value should not exceed 3 and should not be less than 0.2. Table 5 presents the results of this coefficient:

Table 5: Variance Inflation Factor (VIF)

		VIF
Informations technology techniques	→ Enterprise Resource Planning	1.000
Information technology techniques	→ Data Analysis Systems	1.000
Informations technology techniques	→ Internal Audit	1.000
Informations technology techniques	→ Financial reporting quality	1.241
Internal Audit	→ Financial reporting quality	1.241
financial reporting quality	→ Relevance	1.000
financial reporting quality	→ Reliability	1.000
financial reporting quality	→ Comparability	1.000
financial reporting quality	→ Understandability	1.000
financial reporting quality	→ Consistency	1.000

Source: SmartPLS 4 software outputs

The results in Table 5 show no multicollinearity among the exogenous and endogenous latent variables, as the Variance Inflation Factor values ranged between 1.000 and 1.241, which are below the threshold of 3. Therefore, these values can be reliably used to assess the structural model's path coefficients and to test the study's hypotheses without removing any variable.

- **Coefficient of Determination (R^2):** This is used to measure the extent to which exogenous latent variables explain the endogenous latent variables. The explanatory power is classified as follows: above 0.67 indicates strong explanatory power, between 0.33 and 0.67 indicates moderate explanatory power, between 0.12 and 0.33 indicates weak explanatory power, and below 0.12 indicates no explanatory power.

Table 6: Coefficients of Determination (R^2) for the Study Model

	R-square	R-square adjusted
Informations technology techniques + Internal Audit	0.157	0.140
Informations technology techniques	0.242	0.234

Source: SmartPLS 4 software outputs

It is evident from Table 6 that the independent variable together with the mediating variable are able to explain financial reporting quality only to a weak degree, as the value of the coefficient of determination (R^2) for the model reached 0.157, meaning that only 15.7% of the variance in financial reporting quality is explained. The adjusted coefficient of determination (Adjusted R^2) was 0.140, reflecting a reduction in the explanatory power of the model when the number of variables is taken into account. In contrast, when using the independent variable alone, the value of the coefficient of determination increased to 0.242, and the adjusted R^2 to 0.234, indicating that this variable alone has a stronger

explanatory ability for financial reporting quality. Therefore, the results suggest that introducing "internal auditing" as a mediating variable did not enhance the model's effectiveness; instead, it led to a decrease in explanatory power.

- **Effect Size (F^2) Evaluation:** The effect size is judged according to the following criteria:
  - Less than 0.02 → No effect
  - From 0.02 to 0.15 → Weak effect
  - From 0.15 to 0.35 → Moderate effect
  - Greater than 0.35 → Strong effect

Table 7: Effect Size Results

	financial reporting quality	Internal Audit
Internal Audit	0.003	-
Informations technology techniques	0.160	0.319

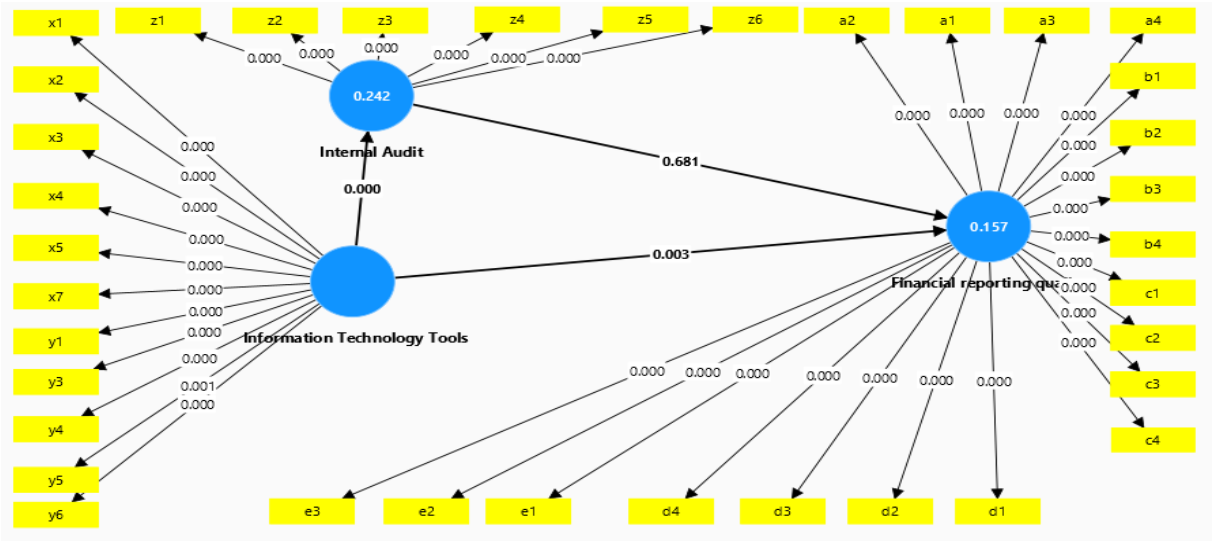
Source: SmartPLS 4 software outputs

The analysis results of the effect sizes presented in Table 7 indicate that *internal audit* does not have a significant direct impact on the quality of financial reports, with an effect size of 0.003, which is extremely weak and lacks practical significance. In contrast, the findings revealed that information technology techniques represent the relatively stronger factor in the model, with a direct effect size of 0.160 on the quality of financial reports, reflecting a moderate effect. Moreover, the results showed that IT techniques significantly contribute to strengthening internal audit, with an effect size of 0.319, which also represents a moderate influence, pointing to their role in enhancing the efficiency and effectiveness of internal audit procedures. Based on these findings, it can be concluded that information technology techniques have both a direct and indirect role in influencing the quality of financial reports. They directly improve report quality and indirectly do so by boosting internal audit performance. Although the indirect effect remains weak, its relative contribution can be effective within the mediating relationship between IT techniques and financial reporting quality.

4.3 Hypotheses Testing

After completing the measurement and structural evaluation of the study's overall model and confirming its suitability for hypothesis testing and deriving the study's findings, the hypotheses are tested by assessing the fit and significance of the relationships within the structural model, referred to as path coefficients, as illustrated in Figure 3. Meanwhile, Table 8 presents the results of fit and significance between the relationships of the structural model, based on which the study's hypotheses will be either rejected or accepted.

Figure 3: Path Coefficients of the Study's Main Variables



Source: SmartPLS 4 software outputs

Table 8: Path Analysis

Decision	p-values	t-statistics	Original Sample	Hypotheses	Type of Effect
Accepted	0.000	6.544	0.492	1	Direct
Accepted	0.003	2.929	0.422	2	
Rejected	0.681	0.411	-0.058	3	
Rejected	0.705	0.379	-0.029	4	Indirect

Source: SmartPLS 4 software outputs

Testing the First Hypothesis

The first hypothesis is formulated as follows:

- H_0: There is no positive and statistically significant effect of the use of information technology techniques on the effectiveness of internal auditing.
- H_1: There is a positive and statistically significant effect of the use of information technology techniques on the effectiveness of internal auditing.

The results in Table 7 show that the path coefficient value reached 0.492, which is much greater than 0, indicating a strong relationship between the independent variable and the mediating variable. The T-value was estimated at 6.544, which exceeds the threshold of T = 1.96 at a significance level of 0.05. We also find that the P-value is 0.000, which is less than

0.05. Therefore, the effect between the two variables is statistically significant, meaning that the use of information technology techniques has a positive effect on the effectiveness of internal auditing. This leads to the acceptance of the alternative hypothesis and the rejection of the null hypothesis.

Testing the Second Hypothesis

The second hypothesis is formulated as follows:

- H_0: There is no positive and statistically significant effect of the use of information technology techniques on the quality of financial reporting.
- H_1: There is a positive and statistically significant effect of the use of information technology techniques on the quality of financial reporting.

The results in Table 7 show that the path coefficient value reached 0.422, which is greater than 0, indicating a strong relationship between the independent variable and the dependent variable. The T-value was estimated at 2.929, which exceeds the threshold of T = 1.96 at a significance level of 0.05. We also find that the P-value is 0.003, which is less than 0.05. Therefore, the effect between the two variables is statistically significant, meaning that the use of information technology techniques has a positive effect on the quality of financial reporting. This leads to the acceptance of the alternative hypothesis and the rejection of the null hypothesis.

Testing the Third Hypothesis

The third hypothesis is formulated as follows:

- H_0: There is no positive and statistically significant effect of internal audit effectiveness on the quality of financial reporting.
- H_1: There is a positive and statistically significant effect of internal audit effectiveness on the quality of financial reporting.

The results in Table 7 show that the path coefficient value reached -0.058, which is less than 0, indicating the absence of a strong relationship between the mediating variable and the dependent variable. The T-value was estimated at 0.411, which is lower than the threshold of T = 1.96 at a significance level of 0.05. We also find that the P-value is 0.681, which is greater than 0.05. Therefore, the effect between the two variables is not statistically significant, meaning that internal audit effectiveness does not have a positive effect on the quality of financial reporting. This leads to the rejection of the alternative hypothesis and the acceptance of the null hypothesis.

Testing the Fourth Hypothesis

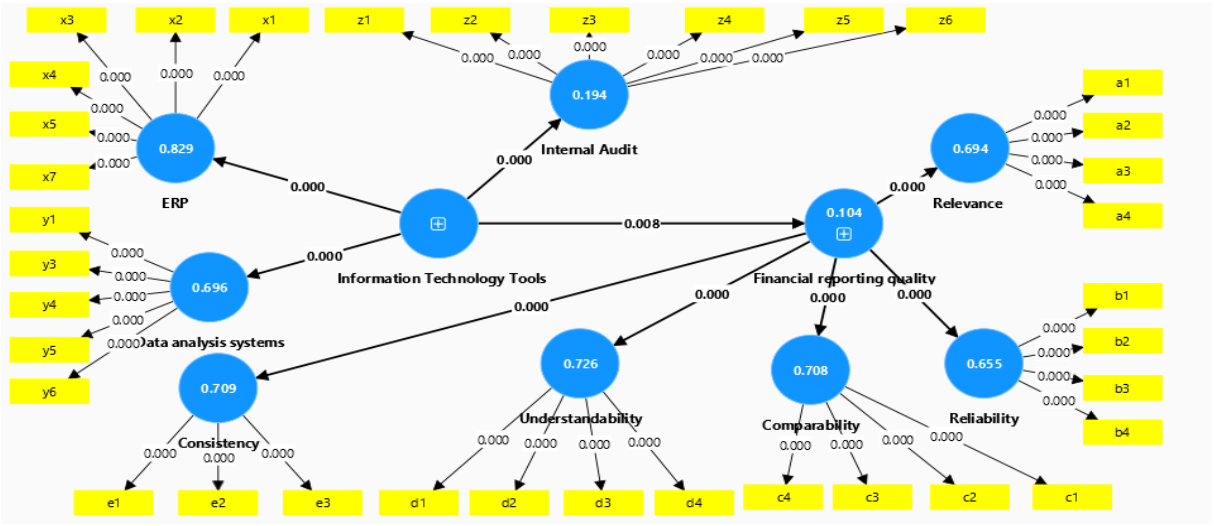
The fourth hypothesis is formulated as follows:

- H_0: There is no positive and statistically significant effect of using information technology techniques in internal auditing on the quality of financial reporting.
- H_1: There is a positive and statistically significant effect of using information technology techniques in internal auditing on the quality of financial reporting.

The results show that the path coefficient value reached -0.029, which is less than 0, indicating the absence of a strong relationship between the independent and dependent variables when internal auditing is used as a mediating variable. The T-value was estimated at 0.379, which is lower than the threshold of T = 1.96 at a significance level of 0.05. We also find that the P-value is 0.705, which is greater than 0.05. Therefore, the effect among the variables is not statistically significant, meaning that the use of information technology techniques in internal auditing does not have a positive effect on the quality of financial reporting. This leads to the rejection of the alternative hypothesis and the acceptance of the null hypothesis.

Finally, the study arrives at the model that represents the final results, relying on structural equation modeling using the partial least squares (PLS) method, as illustrated in Figure 5.

Figure 5: The Modified Structural Model



Source: SmartPLS 4 software outputs

Figure 5 is considered a general summary of the statistical study, where it was concluded that the use of information technology techniques has a positive effect on both the effectiveness of internal auditing and the quality of financial reports. In contrast, using internal auditing as a mediating variable did not result in a positive effect. Moreover, the study found no effect of the internal auditing function on the quality of financial reports, which led to the removal of the path linking internal auditing to financial reporting quality.

5. Discussion

5.1 The Effect of Information Technology Techniques on the Effectiveness of Internal Auditing

The results of the path analysis revealed a positive and statistically significant effect of using information technology techniques on the effectiveness of internal auditing, based on responses from a sample of internal auditors in economic entities in Algeria. This indicates that the auditors' use of simple data analysis systems and ERP systems has enhanced the accuracy and efficiency of their work.

This result is consistent with the findings of Chi et al. (2024), Ayab et al. (2023), and Saeed et al. (2022), who confirmed the existence of a positive relationship between information technology techniques and internal auditing. Information technology was considered one of the most important factors in improving the effectiveness of internal auditing. Likewise, Silva et al. (2023) demonstrated that the use of ERP systems had a positive impact on the effectiveness of internal auditing in Portugal, while Al- Khasawneh and Baniata (2024) showed that simple data analysis systems improved auditors' performance in Jordanian banks. However, this result contrasts with the findings of Marwanto and Soepriyanto (2025), who showed that information technology does not have a significant effect on the effectiveness of internal auditing in public institutions in Indonesia.

According to the interview sample responses, the use of ERP systems and simple data analysis tools, whether through Excel, dashboards, or other supporting software, contributed significantly to improving auditors' performance by increasing accuracy, accelerating task completion, and simplifying procedures.

5.2 The Effect of Information Technology Techniques on the Quality of Financial Reports

The results of the path analysis indicated a positive and statistically significant effect of the use of information technology techniques on the quality of financial reports for a sample of economic entities in Algeria. This implies that the investment of entities in adopting information technology techniques, such as simple data analysis systems and ERP systems, contributed to improving the quality and transparency of their financial reports.

This finding was confirmed by the studies of Rachmad et al. (2024), Darwis et al. (2023), and Meliana and Ansar (2021), which all highlighted the strong positive relationship between information technology and the quality of financial reports. The use of these systems helped reduce errors, accelerate the reporting process, and enhance transparency and reliability. On the other hand, this result contrasts with the findings of Salehi and Torabi (2012), which stated that while information technology enhances the relevance of accounting information, it simultaneously undermines its reliability, and only marginally increases comparability.

Based on the interview sample responses, this result can be explained by the fact that the adoption of information technology techniques by the concerned entities significantly contributed to improving the relevance and reliability of the information disclosed in their financial reports. This was achieved through providing accurate systems for data processing, reducing the likelihood of errors or manipulation, and facilitating timely access to information, which enhances transparency and strengthens user confidence in those reports.

5.3 The Effect of Internal Audit Effectiveness on the Quality of Financial Reports

The results of the path analysis indicate the absence of a statistically significant effect of internal auditing on the quality of financial reports, based on the responses of a sample of internal auditors in economic entities in Algeria. This suggests that there is no direct and clear relationship between the effectiveness of internal auditing and the quality of financial reports.

This result supports the findings of Adewara et al. (2023) and Bakri et al. (2025) who pointed out that the effectiveness of internal auditing does not have a tangible positive impact on the quality of financial reports in public entities in Nigeria and Indonesia, due to the weak role of internal auditors in those entities. In contrast, this result contradicts many previous studies, such as Ebimobowei and Joyce (2024), which emphasized the vital role of internal auditors in improving the quality of financial reports. Similarly, the studies of Sari et al. (2024), Riyanto and Rapina (2024), and Qadri (2025) showed that internal auditing has a significant effect in enhancing the relevance and reliability of information in financial reports through its contribution to evaluating internal control systems, risk management, and governance.

Interview results revealed that the primary reason for this finding is the absence of audit committees in most Algerian entities, in addition to the lack of effective implementation of internal auditor recommendations. One interviewed internal auditor mentioned the existence of significant overlap in duties within his entity, as he was responsible for both internal auditing and management control simultaneously. Another auditor stated that he had to temporarily assume the tasks of an accountant in the absence of the designated employee, which negatively affected his independence and objectivity, and consequently, the effectiveness of his monitoring role.

5.4 The Impact of Using Information Technology Techniques in Internal Auditing on the Quality of Financial Reporting

The results of the path analysis showed no statistically significant effect of information technology techniques on the quality of financial reporting when internal auditing was adopted as a mediating variable in this relationship. The reason for this is the absence of any effect between the effectiveness of internal auditing and the quality of financial reporting for a sample of economic entities in Algeria.

This finding contradicts Mohamed et al. (2022), who found a strong relationship between information technology techniques and the quality of financial reporting when used by internal auditors in economic entities in Egypt. Similarly, Nhial et al. (2025) confirmed that information technology techniques employed in the internal auditing departments of economic entities in Sudan contribute to improving the understandability, comparability, and reliability of the disclosed financial information.

This result was interpreted, based on previous findings and the opinions of the interview sample, as indicating that the lack of a clear effect of internal auditing on the quality of financial reporting does not necessarily stem from weaknesses in auditors' competencies or in the tools used, but rather from the absence of a supportive organizational environment within the concerned entities. This deficiency is also attributed to the limited realization of independence and objectivity. The interviews revealed that auditors are often assigned additional tasks that overlap with their auditing responsibilities, which negatively affects their professional role. Marwanto and Soepriyanto (2025) supported this argument, noting management's limited interest in developing the internal audit function due to the scarcity of training programs and the lack of investment in enhancing the competencies of auditors in public entities in Indonesia. This applies equally to the Algerian economic entities under study, where the interviewees confirmed this trend, pointing out that entities do not provide specialized software for internal auditing that could make a significant difference in performance efficiency and result accuracy. This reflects the weakness of the necessary infrastructure to activate the role of internal auditing effectively in improving the quality of financial reporting, in addition to the incomplete implementation of internal auditors' recommendations regarding the quality of financial statements and accounts, which is due to the reliance on external parties to perform this function. This further confirms the weakness of the internal audit function in the concerned entities.

6. Conclusion

This study aimed to examine the impact of using information technology techniques in internal auditing on the quality of financial reporting, with a particular focus on ERP systems and simple data analysis tools. This was carried out by analyzing the extent to which these techniques influence the effectiveness of internal auditing and their reflection on the primary and secondary characteristics of financial information quality, based on the responses of a sample of internal auditors in economic entities in Algeria. The study reached a set of results that can be summarized as follows:

- The use of information technology techniques, especially ERP systems, has a positive impact on enhancing the effectiveness of internal auditing by facilitating access to necessary information and improving its processing;
- Information technology techniques contribute to improving the quality of financial reporting by supporting disclosure processes and increasing the accuracy and reliability of information;
- Administrative support plays a pivotal role in strengthening the relationship between internal auditing and the quality of financial reporting;
- The absence of audit committees in the entities under study negatively affected the independence of the internal audit function;
- The overlap of internal auditors' tasks led to a weakening of their objectivity, reducing the effectiveness of their role in improving the quality of financial reporting;
- There is no statistically significant effect of using information technology techniques in internal auditing on the quality of financial reporting due to weak implementation of internal auditors' recommendations;
- Other factors are relied upon by the entities under study to improve the quality of financial reporting, such as external auditors.

Based on the findings, the current study recommends the following:

- Internal auditors should ensure the continuous development of their skills in using modern information technology tools;
- Internal auditors should strictly adhere to their scope of work without interfering in the execution of other tasks under any circumstances, in order to maintain their objectivity during the performance of their duties;

- Senior management should commit to implementing the recommendations of internal auditors included in their final reports and justify any recommendation that is not taken into consideration;

- Economic entities in Algeria should invest in acquiring technology-based programs that support the internal auditing process;

- Audit committees should be established within entities to ensure the independence of internal auditors, thereby enhancing the quality of their results;

- Continuous training and development programs should be provided for employees in the internal audit department to build their skills and strengthen their ability to perform tasks efficiently and professionally.

Future research could expand the scope of investigation by examining a larger sample of economic entities across different sectors and regions, in order to capture sectoral variations and provide a more comprehensive understanding of the relationship between information technology techniques, internal auditing, and the quality of financial reporting. Moreover, comparative studies between economic entities in Algeria and those in other countries with more advanced auditing practices would help to highlight contextual differences and identify best practices that could be adopted locally. Further research could also focus on the role of audit committees and corporate governance mechanisms in strengthening the independence and effectiveness of internal auditing, thereby enhancing the quality of financial reporting.

Acknowledgement

The authors would like to express their sincere gratitude to the internal auditors and employees of the economic entities in Algeria who participated in this study and provided valuable insights. Special thanks are extended to the University of Constantine 2 Abdelhamid Mehri and the University Center of Abdelhafid Boussouf Mila for their institutional support, which facilitated the completion of this research. The authors are also grateful to colleagues and peers who offered constructive feedback during the development of this work.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

1. Abbas, A. H. (2024). The Role of Internal Audit Practices in Improving The Quality of Financial Reporting for Commercial Companies. A Sample of Iraqi Commercial Banks. *Anggaran: Jurnal Publikasi Ekonomi dan Akuntansi*, *2*(4), 01-21. https://doi.org/10.61132/anggaran.v2i4.852

2. Adewara, Y. M., Osaloni, B., Ajoloko, O. M., Victor, o. O., & Yinka, A. (2023). Internal Audit Practice and Financial Reporting Quality in the Public Sector. *International Journal of Advanced Multidisciplinary Research and Studies,*, *3*(3), 993-998. https://www.researchgate.net/publication/371852725_Internal_Audit_Practice_and_Financial_Reporting_Quality_in_the_Public_Sector

3. Al- Khasawneh, R. O., & Baniata , J. A. S. (2024). The Extent of Using Information Technology in Internal Auditing and The Differences in Its Use in Jordanian Banks *Journal of System and Management Sciences*, *14*(1), 418-435. https://doi.org/10.33168/JSMS.2024.0124

4. Alkebsi, M., & Aziz, K. A. (2017). Information technology usage, top management support and internal audit effectiveness. *Asian Journal of Accounting and Governance*, *8*(1), 123-132. https://doi.org/10.17576/AJAG-2017-08SI-11

5. Ayab, A., Aamb, A., Alawawdeh, H. A., Aljundi, N. A., Morshed, A., Dahbour, S. A., & Alqaraleh, M. H. (2023). The effect of system quality and user quality of information technology on internal audit effectiveness in Jordan, and the moderating effect of management support. *Applied Mathematics, 17*(5), 859-866. https://doi.org/10.18576/amis/170512

6. Bakri, B., Pagalung, G., Amiruddin, A., & Syamsuddin, S. (2025). Determinants of Internal Auditor Effectiveness and Its Impact to the Quality of Financial Reporting in Supporting Achievement of Sustainable Development Goals (SDGs) at Religious Universities in Indonesia. *Journal of Lifestyle and SDGs Review, 5*(2), e03749-e03749. https://doi.org/10.47172/2965-730X.SDGsReview.v5.n02.pe03749

7. Barna, L.-E.-L., Ionescu, B.-Ş., & Ionescu-Feleagă, L. (2021). The relationship between the implementation of erp systems and the financial and non-financial reporting of organizations. *Sustainability, 13*(21), 11566. https://doi.org/10.3390/su132111566

8. Chi, Z., Shah, S. M., Wai, L. Y., & Ngalim, S. M. (2024). The Mediating Effect of Information Technology Usage on the Relationship of Internal Audit Processes and Internal Auditor Competence towards Internal Audit Effectiveness: Evidence from the Chinese Financial Sector. *International Journal of Business and Management, 19*(6), 139-139. https://doi.org/10.5539/ijbm.v19n6p139

9. Darwis, H., Djaelani, Y., & Ohorella, R. W. U. (2023). The Effect of Internal Audit, and Utilization of Information Technology, on the Quality of Financial Statements With Internal Control System as a Moderating Variable *International Journal of Economics Development Research, 4*(6). https://doi.org/10.37385/ijedr.v5i2.3995

10. Doda, N. B., & Murthy, R. (2025). Effects of Information Technology Utilization on Internal Audit Effectiveness and Moderating Effect of Management Support in Ethiopian HIs. *Journal of Tianjin University Science and Technology, 58*(3), 120-132. https://doi.org/10.5281/zenodo.14998493

11. E'leimat, D., Ebbini, M. M. A., Aryan, L. A., & Al-Hawary, S. I. S. (2023). The effect of big data on financial reporting quality. *International Journal of Data & Network Science, 7*(4). https://doi.org/10.5267/j.ijdns.2023.7.015

12. Ebimobowei, A., & Joyce, T. I. (2024). Internal Audit Practices and Financial Reporting Quality of Listed Manufacturing Firms in Nigeria: The Role of Audit Committee. *African Journal of Accounting and Financial Research, 7*(2), 276-305. https://doi.org/10.52589/AJAFR-CBDBULKD

13. Mardinan, T., Dahlan, M., & Fitriyah, F. K. (2018). Effect of human resources, leadership style, the use of information technology and internal control on the quality of financial statements. *Journal of accounting auditing and business, 1*(1), 43-57. https://doi.org/10.24198/jaab.v1i1.18795

14. Marwanto, M., & Soepriyanto, G. (2025). The influence of audit quality, the use of information technology, management support, and the application of guidelines on the effectiveness of internal audit in preventing and detecting fraud in hospitals. *Edelweiss Applied Science and Technology, 9*(3), 1819-1842. https://doi.org/10.55214/25768484.v9i3.5693

15. Meliana, M., & Ansar, R. (2021). Utilization of information technology and Organizational commitment to the reliability of financial statements with Internal Control Moderation. *Bongaya Journal of Research in Accounting, 4*(1), 38-44. https://doi.org/10.37888/bjra.v4i1.262

16. Mhlanga, D. (2024). The role of big data in financial technology toward financial inclusion. *Frontiers in big Data, 7*, 1184444. https://doi.org/10.3389/fdata.2024.1184444

17. Mohamed, M. A. M., Abdullah, A. S. M., & Khattab, D. S. (2022). The Impact of Digital Transformation on the Internal Audit Quality and its Reflection on Enhancing the Quality of Financial Reporting. **The Scientific Journal of Financial and Administrative Studies and Research***, *13*(2), 397-437. https://doi.org/10.21608/masf.2022.240100

18. Mohamed, M. M. A. (2018). *Developing the Comprehensive Income to Enhance the Quality of Financial Reports* Helwan University]. https://www.researchgate.net/profile/Dr-Mohamed-Ali-Mohamed/publication/360919754_Developing_the_Comprehensive_Income_to_Enhance_the_Quality_of_Financial_Reports_An_Empirical_Study/links/62928f1f6886635d5caa6759/Developing-the-Comprehensive-Income-to-Enhance-the-Quality-of-Financial-Reports-An-Empirical-Study.pdf

19. Nhial, A. M., Shiku, U. O., & Siwale, J. (2025). Impact of Integrated Financial Management Information System on Internal Audit Practice. A Case Study of the Ministry of Finance in Juba, South Sudan. *International Journal of Finance*, *10*(3), 11-29. https://ideas.repec.org/a/bhx/ojtijf/v10y2025i3p11-29id2601.html

20. Qadri, F. A. (2025). Impact of Internal Audit on the Financial Performance: A Study of Banking Sector in Saudi Arabia. *Asian Journal of Applied Science and Technology*, *9*(1), 29-39. https://doi.org/10.38177/ajast.2025.9104

21. Rachmad, Y. E., Bakri, A. A., Irdiana, S., Waromi, J., & Sinlae, A. A. J. (2024). Analysis of The Influence of Financial Information Systems,Internal Control Systems,and Information Technology on Quality of Financial Reports. *Jurnal Informasi dan Teknologi*, *6*(1), 266-271. https://doi.org/10.60083/jidt.v6i1.513

22. Riyanto, N. F., & Rapina, R. (2024). Internal Audit Quality, Audit Committee, and Its Influence on Financial Reporting Quality. *Jurnal Ilmiah Akuntansi Universitas Pamulang*, *12*(2), 179-196. https://doi.org/10.32493/jiaup.v12i2.40090

23. Saeed, G. H., Hussein, M. D., & Saudi, O. A. (2022). The impacts of information technology governance on internal auditing: A literature review. *Journal of Management and Economics*, *47*(133), 341-347. https://doi.org/10.31272/jae.i133.949

24. Salehi, M., & Husini, R. (2011). A study of the effect of information technology on internal auditing: Some Iranian evidence. *African Journal of Business Management*, *5*(15), 6168. https://doi.org/10.5897/AJBM10.1013

25. Salehi, M., & Torabi, E. (2012). The Role Of Information Technology In Financial. *Business Excellence*, *6*(1), 115. https://core.ac.uk/download/pdf/14451637.pdf

26. Salur, M. N., & Kattar, W. K. (2021). The impact of enterprise resource planning (ERP) on the audit in the context of emerging technologies. *Ekonomi Maliye İşletme Dergisi*, *4*(2), 115-123. https://doi.org/10.46737/emid.1032735

27. Sari, G. I., Suhaili, A., & Lesfandra, L. (2024). The Mediation Role of Audit Quality: Impact Internal Audit Strategy, Auditor Ethics, and Accounting Culture on Financial Report Quality. *Atestasi: Jurnal Ilmiah Akuntansi*, *7*(1), 300-316. https://doi.org/10.57178/atestasi.v7i1.779

28. Si, Y. (2022). Construction and application of enterprise internal audit data analysis model based on decision tree algorithm. *Discrete Dynamics in Nature and Society*, *2022*(1), 4892046. https://doi.org/10.1155/2022/4892046

29. Silva, A. P., & Marques, R. P. (2022). The contribution of ERP systems to the maturity of internal audits. *International Journal of Information Technologies and Systems Approach*, *15*(1), 1-25. https://doi.org/10.4018/IJITSA.311501

30. Silva, T., Marques, R. P., & Azevedo, G. (2023). The impact of ERP systems in internal auditing: the Portuguese case. *Procedia Computer Science*, *219*, 963-970. https://doi.org/10.1016/j.procs.2023.01.373

31. Sina, M. A., Chowdhury, M. S. A., Shakib, M. T., Akter, S., & Arafat, A. Y. (2021). The role of information technology in improvement of quality of the financial reports prepared by the commercial banks in Bangladesh. *Indian Journal of Finance and Banking*, *5*(2), 85-97. https://www.cribfb.com/journal/index.php/ijfb

32. Wahdan, M. A., & El-Serafy, A. A. M. (2020). The Impact of Continuous Auditing Technology in ERP System on Improving the Internal Audit Performance: A Field Study. *The Scientific Journal of Commercial Research*, *38*(3), 9-44. https://doi.org/10.21608/sjsc.2020.116960

Appendices

Appendix A: Questionnaire Items

No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Axis One: Information Technology Techniques						
Dimension One: Enterprise Resource Planning (ERP) System						
01	The ERP system operates efficiently and continuously without interruption.					
02	The ERP system allows easy and timely access to the necessary information.					
03	The ERP system provides detailed and regularly updated reports to support decision-making processes.					
04	The ERP system organizes internal operations and ensures coordination between different departments and units.					
05	The ERP system allows continuous updating and reviewing of information to ensure its accuracy.					
06	The ERP system ensures high levels of security to protect the economic entity's data.					
07	The ERP system contributes to improving operations by providing innovative solutions that support the economic entity's decisions.					
Dimension Two: Data Analysis Systems						
01	Data analysis systems contribute to obtaining accurate and error-free results.					
02	Data analysis systems improve the quality of operations execution and reduce the need for manual intervention.					
03	Data analysis systems perform tasks efficiently, effectively, and in a timely manner.					
04	Data analysis systems provide accurate analyses that assist in making strategic decisions.					
05	Data analysis systems contribute to enhancing					

	transparency by providing reports that can be analyzed and reviewed.					
06	Data analysis systems ensure the protection of information from unauthorized access.					

Axis Two: Internal Audit Function

No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
01	Internal auditing supported by information technology contributes to improving the effectiveness of the entity's financial operations.					
02	Internal auditing enhances credibility and transparency within the entity through the use of data analysis systems.					
03	Internal auditing helps reduce potential risks by accurately tracking financial operations through the ERP system.					
04	Information technology systems help save time and effort during the implementation of internal audit procedures.					
05	Information technology techniques contribute to improving the efficiency of the internal auditor.					
06	Information technology techniques improve internal audit procedures and facilitate the examination of financial records and ledgers.					

Axis Three: Financial Reporting Quality

Dimension 1: Relevance

No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
01	Financial reports contain additional details that enable users to make appropriate decisions.					
02	The information provided in financial reports helps predict the future of the					

	entity.					
03	Financial reports include accounting information capable of influencing users' decisions.					
04	The entity ensures the issuance of financial reports on a periodic basis.					
Dimension 2: Reliability						
No.	**Statement**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
01	The information in financial reports reflects the truthfulness of economic events that occurred during the period.					
02	Financial reports contain unbiased information.					
03	Financial reports contain error-free information.					
04	Financial reports contain information that is objective and verifiable.					
Dimension 3: Comparability						
No.	**Statement**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
01	The financial reports issued by the entity include information comparable with the results of similar entities.					
02	The financial reports issued by the entity include information comparable with the results of previous periods of the same entity.					
03	The entity complies with accounting principles and adopted standards when preparing financial reports.					
04	Providing comparability in financial reports increases their efficiency and effectiveness.					
Dimension 4: Understandability						

No.	Statement	Strongly Agree	Agree		Disagree	Strongly Disagree
01	The accounting information disclosed in the reports is easy to understand for all users.					
02	Financial reports are prepared and written in clear and simple language.					
03	The entity ensures that the necessary information is provided without being overly brief or overly detailed to the point of losing meaning.					
04	Graphs and charts are used in financial reports to illustrate and facilitate the understanding of information visually.					
	Dimension 5: Consistency					
No.	**Statement**	Strongly Agree			Disagree	Strongly Disagree
01	The entity ensures that financial statements are prepared using the same methods adopted in previous years and in accordance with the same policies.					
02	The entity accompanies its financial reports with appendices that explain all changes in the preparation and evaluation methods of financial reports.					
03	The principle of consistency is adhered to when preparing and presenting disclosed financial reports.					

RESEARCH ARTICLE

Virtual Influencers as a New Format of Interactive Advertising

Eduard Matveevich Ivaykin
PhD Candidate
Russian State University for the Humanities, Moscow
Russian Federation
Email: Eduard.ivaykin@gmail.com

Vladimir Dmitrievich Sekerin
Doctor of Economics, Professor
ead of the Department of Branding and Visual Communications, Russian State University for the Humanities, Moscow
Russian Federation
Email: bcintermarket@yandex.ru

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords influencer marketing, interactive advertising, personalized media intermediary, virtual influencer

Abstract

The rapid evolution of digital technologies and the growing dominance of social media platforms have transformed the nature of advertising. Traditional influencers, who once played a central role in establishing brand–audience connections, are increasingly being complemented or replaced by virtual influencers (VIs). These algorithmically generated personas, developed using artificial intelligence, computer graphics, and machine learning, can autonomously produce content, interact with audiences, and serve as brand representatives in interactive advertising campaigns.

This study explores the phenomenon of virtual influencers in the global and Russian advertising ecosystems, analyzing their communicative potential, economic effectiveness, and ethical implications. The research adopts a qualitative-analytical approach, drawing on secondary data, case studies, and theoretical insights from media studies, marketing science, and cultural theory. Findings suggest that VIs offer significant advantages in terms of brand control, personalization, cost efficiency, and cross-platform integration. However, challenges persist, including audience skepticism, questions of authenticity, and ethical dilemmas regarding transparency, manipulation, and identity construction.

The paper highlights pioneering efforts in Russia where media companies, startups, and advertising agencies have experimented with virtual influencer technologies. These include the use of digital avatars in branding campaigns, cultural promotion, and commercial advertising, illustrating the potential of VIs as both cultural products and marketing tools. The authors conclude that while VIs are not likely to fully replace human influencers, their integration into interactive advertising strategies will expand, particularly as AI-driven personalization and immersive technologies continue to advance.

Citation. Eduard M. I., Vladimir D. S. (2025). Virtual Influencers as a New Format of Interactive Advertising. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 157–161. https://doi.org/10.56352/sei/8.11.12

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 14.05.2025 | Accepted: 30.07.2025 | Published: 28.08.2025 (available online)

Introduction

The twenty-first century has been marked by the convergence of technological progress and consumer culture, reshaping the modes of communication between brands and audiences. Social media platforms such as Instagram, TikTok, and YouTube have popularized influencer marketing as a dominant form of interactive advertising. Influencers, who initially emerged as niche content creators, gradually became powerful media

intermediaries, shaping consumer preferences and purchasing behavior through perceived authenticity and peer-like interaction.

However, as the influencer market grew, challenges emerged: rising costs of collaboration, scandals affecting influencer credibility, and audience fatigue toward repetitive advertising content. In this context, virtual influencers (VIs)—digitally created characters that simulate human-like appearance, behavior, and communication—have emerged as a transformative innovation. Unlike human influencers, VIs are entirely controlled by their creators, ensuring consistency, scalability, and brand alignment.

Globally, examples such as Lil Miquela (USA), Imma (Japan), and Shudu Gram (UK/South Africa) demonstrate how VIs can attract millions of followers, collaborate with luxury brands, and even advocate for social issues. They blur the boundaries between reality and simulation, challenging traditional notions of authenticity while offering marketers a new medium for interactive advertising.

In Russia, the phenomenon is relatively recent but increasingly relevant. The interplay of technological development, cultural identity, and marketing innovation provides fertile ground for the adaptation of VIs. This paper seeks to analyze their emergence and role within Russia's advertising ecosystem, situating the discussion in broader global trends.

The objectives of this study are threefold:

1. To define the communicative and economic significance of VIs in interactive advertising.
2. To examine their implementation in Russia, focusing on case studies and industry efforts.
3. To assess the ethical and cultural challenges posed by virtual media personas.

By addressing these aims, the paper contributes to the literature on digital marketing and offers practical implications for advertisers, cultural policymakers, and media scholars.

Chapter 1: Efforts in Russia

Russia's advertising industry has traditionally demonstrated adaptability to global innovations while preserving cultural specificity. The adoption of virtual influencers exemplifies this tendency, blending international technological trends with local cultural narratives.

1.1 Early Experiments

The first Russian experiments with VIs appeared around 2018–2019, when creative agencies and independent digital artists began developing avatars for social media campaigns. These efforts were initially experimental, aimed at testing audience engagement with synthetic personas.

1.2 Industry Engagement

Several Russian advertising agencies have since integrated VIs into campaigns. Avatars were used in fashion and beauty promotions, particularly targeting younger audiences accustomed to digital aesthetics. Some banks and technology firms also experimented with virtual assistants doubling as influencers, merging marketing communication with customer service.

1.3 Cultural and Ethical Dimensions

In Russia, debates surrounding authenticity and cultural identity significantly shape audience reception of VIs. While younger consumers show curiosity and acceptance, older demographics often express skepticism toward artificial personas. Ethical discussions also highlight transparency, with regulators considering whether audiences must always be informed that a VI is non-human.

1.4 Government and Institutional Support

Russia's broader strategy for digital transformation and AI development, articulated in state programs, indirectly supports the rise of VIs. Universities and research centers have begun exploring applications of AI in media, including avatar creation, natural language generation, and sentiment analysis. This suggests that the institutional groundwork for expanding VI usage is already being laid.

1.5 Comparative Perspective

While global leaders such as the United States, Japan, and South Korea remain ahead in the commercialization of VIs, Russia's efforts demonstrate a unique interplay of technological innovation, creative industries, and cultural adaptation. The Russian market may not yet rival global examples in scale, but its trajectory indicates growing relevance and international competitiveness.

This article explores the phenomenon of virtual influencers (VIs) in interactive advertising. While traditional influencers have become standard carriers for native advertising, virtual influencers act as algorithmically generated media personas, capable of independent content creation and audience engagement. The study examines their role, effectiveness, and the ethical considerations associated with their use in marketing strategies.

Interest in virtual influencers is driven by the evolution of communication practices in both traditional and digital media (Jenkins, 2019). Traditional media relies on proven formats, while the digital environment demands ongoing innovation in content creation and delivery. Digital audiences expect novelty, which drives experimentation with new forms of messaging. This evolution is accelerated by technological advancements, shifts in user behavior, and personalized content consumption patterns.

From Mass Media to Digital Opinion Leaders

Audiences on digital platforms consistently seek innovative communication solutions (Global Intelligence Hub, n.d.). Digital advertising requires a fundamentally different approach, emphasizing continuous creative experimentation, short content lifecycles, and hybridization of formats. Overcoming advertising blindness requires engaging users with personalized, interactive, and adaptive messaging.

Digital media enables multimodal messages combining visual, textual, auditory, and tactile elements. Interactivity allows users to influence content in real time, while adaptability permits instantaneous adjustments based on behavioral feedback. These capabilities support dynamic, user-centered advertising strategies.

Trust in information sources is increasingly shifting from traditional media to digital opinion leaders and influencers (Adindex, 2024; TASS, n.d.). In Russia, 57% of users consider digital influencer content a primary source of information. Personalized media intermediaries are growing in importance as audiences diversify their information sources and develop media literacy that includes cross-referencing content from multiple channels.

From Real Influencers to Virtual Influencers

Key Opinion Leader (KOL) marketing leverages the authority of trusted individuals to deliver targeted messages. Unlike traditional advertising, KOL marketing is mediated through opinion leaders with social capital, enhancing trust and engagement. Historically, celebrities activated selective attention, emotional resonance, and cognitive efficiency among audiences (Sostav, n.d.; Nielsen, 2024).

Digital micro-celebrities and ordinary influencers blur boundaries between professional media figures and regular users (Heydon, 2018). Brands are now creating virtual influencers (VIs) — AI-powered digital personas capable of interacting with audiences across scales, from mega-influencers to nano-influencers.

VIs support the entire customer decision-making cycle, from generating demand to reinforcing brand associations. Research indicates a strong correlation between prolonged VI-audience engagement and marketing effectiveness (Audrezet & Koles, 2023). Regular, systematic interaction fosters cumulative brand perception, while one-off engagements yield limited results. Effective campaigns combine macro- and micro-influencers, synchronize messaging, and use multiple formats while maintaining core brand messages.

AI-Driven Engagement and Interactive Capabilities

Virtual influencers powered by AI can respond to comments, conduct live streams, and personalize interactions based on user behavior. Integrating AI with storytelling and data analytics allows VIs to deliver relevant content, increase engagement, and create emotional connections (Schaffer, n.d.; Feedspot, n.d.). However, overreliance on AI and personalized techniques may cause audience fatigue and raises ethical concerns regarding privacy and subliminal advertising.

VIs merges contextual communication, behavior-based content adaptation, interactive participation, and transmedia storytelling, bridging digital and physical realities. This integration creates strong emotional connections that can influence purchase behavior, brand loyalty, and user engagement.

Conclusion

Virtual influencers represent an innovative, humanized advertising format. They combine multiple digital identities, emotional engagement, and anthropocentric narratives to simulate real human interaction. AI technologies enhance their capabilities, enabling long-term engagement, interactive responses, and cross-platform storytelling. Recommendations for effective VI campaigns include:

1. Establishing long-term audience contact (minimum six months).
2. Implementing regular AI-powered content publishing.
3. Combining macro- and micro-influencers to enhance trust.
4. Employing cross-platform strategies and mixing owned and rented VIs.

Balancing marketing effectiveness with ethical considerations is critical to avoid audience fatigue and privacy violations. Virtual influencers thus represent a new frontier in interactive advertising, blending technology, creativity, and human-centered communication.

Acknowledgement

The authors wish to thank the Russian State University for the Humanities for its institutional and academic support in carrying out this study. Special appreciation is extended to colleagues in the Department of Branding and Visual Communications for their constructive feedback, as well as to professionals in the Russian advertising industry who provided valuable insights during preliminary discussions.

Conflict of Interest

The authors declare that they have no known financial or personal conflicts of interest that could have influenced the research, analysis, or conclusions presented in this paper.

References

1. Adindex. (2024). Almost 60% of surveyed Russians get news from Telegram channels and bloggers. https://adindex.ru/news/researches/2024/04/11/321911.phtml
2. Audrezet, A., & Koles, B. (2023). Virtual influencer as a brand avatar in interactive marketing. In *Advances in Digital Marketing* (pp. 353–376). Springer. https://doi.org/10.1007/978-3-031-14961-0_16

3. Feedspot. (n.d.). Top 100 AI influencers in 2025 (Virtual Influencers). https://influencers.feedspot.com/virtual_instagram_influencers
4. Global Intelligence Hub: Explore our forecasts and insights. (n.d.). Zenith Media. https://www.zenithmedia.com/global-intelligence/forecasts
5. Heydon, J. (2018). The participatory condition in the digital age. *Canadian Journal of Communication, 43*. https://doi.org/10.22230/cjc.2019v44n3a3394
6. Jenkins, H. (2019). *Convergence culture: Where old and new media collide* (A. V. Gasilin, Trans.).
7. Nielsen. (2024). *Maximizing ROI in a fragmented world — Nielsen annual marketing report*. https://www.nielsen.com/insights/2024/maximizing-roi-in-a-fragmented-world-nielsen-annual-marketing-report
8. Schaffer, N. (n.d.). AI virtual influencers: What is their role in influencer marketing? Nealschaffer. https://nealschaffer.com/virtualinfluencers
9. Sostav. (n.d.). Influencer marketing: Why key opinion leaders have a strong influence on the audience. https://www.sostav.ru/publication/inflyuens-marketing-pochemu-lidery-mnenij-imeyut-bolshoevliyanie-na-auditoriyu-57013.html
10. Sostav. (n.d.). Testing advertising using eye tracking — service or mystification? https://www.sostav.ru/blogs/32546/5006
11. TASS. (n.d.). Study shows that more than half of Russians get news via Telegram. https://tass.ru/obschestvo/2188119
12. Allal-Chérif, O., Puertas, R., & Carracedo, P. (2023). Intelligent influencer marketing: How AI-powered virtual influencers outperform human influencers. Technological Forecasting and Social Change, 200, 123113. https://doi.org/10.1016/j.techfore.2023.123113
13. Kim, I., Ki, C.-W., Lee, H., & Kim, Y.-K. (2024). Virtual influencer marketing: Evaluating the influence of virtual influencers' form realism and behavioral realism on consumer ambivalence and marketing performance. Journal of Business Research, 176, 113579. https://doi.org/10.1016/j.jbusres.2024.113579
14. Kim, D., & Wang, Z. (2024). Comparing marketing effectiveness between human and virtual influencers: Role of not-for-profit message in perceived authenticity and credibility. Computers in Human Behavior: Artificial Humans, 2(2), 100100. https://doi.org/10.1016/j.chbah.2024.100100
15. Belanche, D., Flavián, C., Ibáñez-Sánchez, S., & Schepers, J. (2024). Human versus virtual influencers: A comparative study. Journal of Retailing and Consumer Services, 75, 103552. https://doi.org/10.1016/j.jretconser.2023.103552
16. Sands, S., Ferraro, C., Demsar, V., & Chandler, G. (2022). False idols: Unpacking the opportunities and challenges of falsity in the context of virtual influencers. Business Horizons, 65(2), 165-175. https://doi.org/10.1016/j.bushor.2021.11.005

RESEARCH ARTICLE

The Legal Framework of Public-Private Partnership Contracts: A Comparative Study

Dr
Khalid Bouzidi
Senior lecturer « A », University Centre of Maghnia
Algeria
Email: k.bouzidi@cu-maghnia.dz
https://orcid.org/0009-0001-9856-719X

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Public-private partnership contracts, public sector, private sector, concession contract, public service delegation contracts, BOT contract.

Abstract
This study examines the legal aspects of public-private partnership contracts within the Algerian and French legal framework, as a new mechanism for financing, managing, and operating public utilities. It does so by clarifying the conceptual framework of these contracts and their characteristics that distinguish them from other traditional contracts. It also explains their legal nature and objectives, which are based on balancing two basic requirements: ensuring and improving the quality of public service, on the one hand, and achieving economic efficiency by providing funding for the establishment and management of infrastructure projects at the lowest possible costs, on the other hand. It also presents practical models of partnership contracts in both Algerian and French law, and comes up with results and recommendations that enhance confidence in this type of contract to achieve development goals and attract investments.

Citation. Bouzidi Kh. (2025). The Legal Framework of Public-Private Partnership Contracts: A Comparative Study. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 162–181. https://doi.org/10.56352/sei/8.11.13

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 04.02.2025 | Accepted: 22.07.2025 | Published: 28.08.2025 (available online)

Introduction:

The economic transformations witnessed in recent years, coupled with the expansion of public services provided by states to their citizens through various public facilities for the common good, have imposed unprecedented financial burdens and challenges that have strained and burdened state budgets. This has rendered states unable to effectively manage, administer, operate, or develop the numerous and diverse public projects and facilities.

On this basis, and in order to ensure public service and improve its quality to ensure greater management effectiveness at the lowest possible costs, countries have tended to reconsider the traditional mechanisms for managing and running public projects and facilities, by adopting new management methods that allow the public sector to cooperate with the private sector to achieve the state's development programs, by involving it and granting it the privilege of financing, building, managing, running, operating, or developing infrastructure projects, with the exception of the state's sovereign facilities, as is the case with the judiciary, security, and defense facilities, within the framework of Public-Private Partnership (PPP) contracts, which are enshrined in Algerian law, similar to what has been adopted by comparative legislation, including French law.

It is worth noting in this context that Public-Private Partnership (PPP) contracts are relatively recent, having first appeared in Britain in 1992 under the name of the Private Finance Initiative (PFI)[1]. France did not adopt this

[1]- Carsten Greve ،Graeme A. Hodge, The Challenge of Public-private Partnerships Learning from International Experience, Edward Elgar Publishing, Incorporated, United Kingdom, 2005, p 99

type of contract within an independent legal framework until 2004, with the issuance of Ordinance No. 2004-559 on partnership contracts. This followed several legal reforms, unifying partnership contracts and integrating them into concession contracts under Ordinance No. 65-2016. This transformation was later fully embodied with the issuance of the French Public Procurement Law of 2018[2]. Meanwhile, the Algerian legislature has enshrined public-private partnership contracts in various legal texts, such as the National Property Law, the Water Law, and the Public Procurement Law, under the title of concession contracts and public utility delegation contracts.

The importance of this study lies in the significant role that Public-Private Partnership (PPP) contracts can play in rebalancing spending and management. This is achieved by controlling and rationalizing public expenditures, while simultaneously ensuring the provision of public services and serving the public interest.

Furthermore, these contracts represent a shift away from the traditional model of managing and operating public facilities. They introduce a new concept of contracting that fosters cooperation and partnership between the public and private sectors in all aspects, including the exchange of expertise, modern technology, and resources. This collaboration ultimately leads to a higher quality, more efficient, and more comprehensive public service, aligning with established development goals.

Based on the above, the problem of this study is as follows: What are the legal provisions and rules governing public-private partnership contracts? What is their legal nature and the impact thereof on the rights and obligations of the parties? And how effective are they in achieving development goals?

To answer this problem, the study relied on the analytical approach, analyzing various legal texts, jurisprudential opinions, and some judicial interpretations related to public-private partnership contracts, in order to determine the provisions and rules regulating this type of contract, starting with its concept and characteristics, then its legal nature, and arriving at its models. We also used the comparative approach, through which we attempted to understand the position of both Algerian and French legislation on public-private partnership contracts, by comparing and contrasting the dimensions and objectives of the legal texts regulating this type of contract in both legal framework, linking and harmonizing them.

Based on the above, we divided this study into two sections. In the first section, we addressed the conceptual framework of public-private partnership contracts and their legal nature. In the second section, we addressed practical models of public-private partnership contracts.

I- The conceptual framework of public-private partnership contracts and their legal nature

The conceptual framework for public-private partnership contracts is of paramount importance, as it serves as the reference that defines the basic elements and features of partnership contracts and clarifies their legal nature. This helps define the rights and obligations of the parties and achieve the stated development goals.

1- The concept of public-private partnership contracts

Defining the concept of public-private partnership contracts requires us to first define what is meant by this type of contract, as well as to clarify its characteristics that distinguish it from other traditional contracts.

A- Definition of public-private partnership contracts

The issue of defining public-private partnership contracts has received considerable attention from jurisprudence, legislation, and international organizations, given their growing prevalence as a strategic option and advanced model for implementing various public projects and achieving economic and social goals. The definitions offered have varied and varied, making it difficult to agree on a comprehensive and unified definition that reflects the complex and evolving nature of these contracts.

[2]- Boeing Laishram ،Ganesh Devkar ،Tharun Dolla, Revisiting Public-Private Partnerships Lessons from COVID-19, Springer International Publishing, Switzerland, 2023, pp. 251-252

Accordingly, defining what is meant by public-private partnership contracts requires us to address the definition of these contracts in jurisprudence, then legislation, as well as the definitions set by international bodies, in accordance with the details explained below.

A-1 The jurisprudential definition of public-private partnership contracts

Jurisprudence has differed regarding the definition of public-private partnerships (PPP), depending on the perspective and angle from which they are viewed, whether from a formal, organic, or administrative perspective, or from a functional, economic, social, or legal perspective[3]. Some jurisprudence defines PPPs as "the latest form of cooperation between the public and private sectors, through which public services are provided to citizens through a long-term contractual relationship. Risks, roles, and responsibilities are distributed among the two partners, representing these sectors, according to the superior capabilities and expertise of each, within a framework of achieving the public interest"[4]. This definition appears to focus on the fundamental principles of PPP, identifying the primary objective of the partnership as providing public services and achieving the public interest, as well as the roles, responsibilities, and benefits that this contractual relationship creates. However, it is criticized for neglecting one of the most important elements of partnership: financing, which is the primary motivation for concluding this type of contract. Furthermore, it does not generally address the forms of PPP.

While other jurisprudence defines it as "contracts provided by the private sector as public services on behalf of and under the supervision of public authorities"[5]. This definition appears to be so brief and simplistic that it overlooks many of the fundamental aspects of partnership, focusing solely on the role of the private sector as the provider of public services through agency within the framework of this legal relationship, and the role of the public sector as a public authority in oversight, thus highlighting the traditional shift in roles, without highlighting the fundamental elements of this partnership, such as the time element, the financing element, and the risk distribution element.

In more detail, another branch of jurisprudence defines public-private partnership contracts as "an administrative contract whereby a public legal entity entrusts a private sector entity with financing the investment related to the necessary works and equipment of the public facility, as well as its management, independence, and maintenance throughout the specified contract term, in exchange for sums of money that the contracting authority undertakes to pay to the entity in installments throughout the contract period. Institutions from the public and private sectors work together to implement projects or provide services to citizens, particularly in infrastructure projects"[6]. This definition is clearly more comprehensive than its predecessors, encompassing all aspects of public-private partnerships, However, it would have been more precise and clear to explicitly highlight the financing element.

A-2 - Legislative definition of public-private partnership contracts

Most national legislations have been keen to allocate a specific definition for public-private partnership contracts. We mention among these the French legislator, who has tended to define them under Article 1, Paragraph 01 of

[3]- Jurisprudence acknowledges the difficulty of reaching consensus on the precise meaning of public-private partnerships. Some scholars have even dismissed the concept as futile, arguing that it has no established definition and that it is extremely difficult to examine the origin of this obscure English word. See:
Zhongju Meng ،Xiaohong Dang ،Yong Gao, Public Private Partnership for Desertification Control in Inner Mongolia, Springer Nature Singapore, Singapore, 2019, p 05

[4]- Muhammad Muhammad Abu Saree Ali, The Role of Public-Private Partnerships in Providing Public Services, Egyptian Publishing and Distribution, Egypt, 2020, p. 38

[5]- Haitham Abdullah Dheeb, Fundamentals of Strategic Planning, Al-Yazouri Scientific House, Jordan, 2017, p. 120

[6]- Haitham Abdullah Dheeb, Fundamentals of Strategic Planning, Al-Yazouri Scientific House, Jordan, 2017, p. 120

Ordinance No. 2004-559, as amended and supplemented, regarding partnership contracts[7], as follows: (A partnership contract is an administrative contract by which the State or a public institution of the State entrusts a third party, for a period determined by the amortization period of the investments or the financing methods chosen, with a global mission for the construction or transformation, upkeep, maintenance, operation, or management of works, equipment, or intangible assets necessary for the public service, as well as all or part of their financing, with the exception of any equity participation.

It may also cover all or part of the design of these works, equipment, or intangible assets, as well as the provision of services contributing to the exercise, by the public entity, of the public service mission for which it is responsible.)

Unlike the situation with the Algerian legislator, which has not defined what is meant by public-private partnership contracts, given the lack of a unified and comprehensive law regulating such types of contracts in Algeria, this does not mean that the Algerian legislator does not recognize this type of contract. Rather, it has regulated certain types of them under separate legal texts, such as Presidential Decree No. 15-247 regulating public procurement and public service delegations[8], as well as Executive Decree No. 18-199 of August 2, 2018, relating to the delegation of public services. This requires the Algerian legislator to intervene in a comprehensive legal framework that includes a precise definition of public-private partnership contracts, keeping pace with the rapid development and growing interest in these contracts.

A-3 - Definitions of Public-Private Partnership Contracts by International Bodies

As part of the tireless efforts made by international bodies to standardize and regulate the concept of public-private partnership contracts at the international level, the Organization for Economic Co-operation and Development (OECD) has defined these contracts as: (An agreement between the government and one or more private partners « which may include the operators and the financers » according to which the private partners deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partners)[9].

The World Bank also paid great attention to public-private partnership contracts, defining them as: (A long-term contract between a private party and a government agency for providing a public asset or service, in which the private party bears significant risk and management responsibility)[10].

For its part, the European Commission defined public-private partnership contracts as: (refers to forms of cooperation between public authorities and the world of business which aim to ensure the funding, construction, renovation, management or maintenance of an infrastructure or the provision of a service)[11].

In turn, the United Nations defined public-private partnership contracts as: (a cooperative arrangement between public sector authorities "such as governments or governmental agencies" and private sector companies or

[7]- Ordinance No. 2004-559 of June 17, 200 on partnership contracts, JORF No. 141 of June 19, 2004, Repealed by Ordinance No. 2015-899 of July 23, 2015 - art. 102, Amended by LAW No. 2009-179 of February 17, 2009, Repealed by Ordinance No. 2015-899 of July 23, 2015

[8]- Presidential Decree No. 15-247 of September 16, 2015, regulating public procurement and public service concessions, Official journal of the People's Democratic Republic of Algeria, No. 50, of October 1, 2015

[9]- OECD, Organisation for Economic Co-operation and Development, Dedicated Public-Private Partnership Units A Survey of Institutional and Governance Structures, OECD Publishing, France, 2010, p 16

[10]- World Bank, Caribbean Infrastructure Public Private Partnership Roadmap, World Bank Publications, 2024, p6
Cenay Babaoğlu ،Elvettin Akman ،Onur Kulaç, Handbook of Research on Global Challenges for Improving Public Services and Government Operations, IGI Global, United States, 2020, p 224

[11]- Richard M Scheffler, World Scientific Handbook Of Global Health Economics And Public Policy (A 3-volume Set), World Scientific Publishing Company, Singapore, 2016, p 352
Domenico Sorace ،Ippolito Piazza ،Leonardo Ferrara, The Changing Administrative Law of an EU Member State, The Italian Case, Switzerland, 2020, p 250

entities. These partnerships are typically established for delivering and managing public services or infrastructure projects, where both parties contribute resources and share risks, responsibilities, and rewards)[12].

In general, what can be concluded from the previous definitions is that defining what is meant by contracts requires that it includes a set of basic elements, especially in terms of the necessity of identifying the parties to the partnership, represented by both the public and private sectors, as well as defining the primary objective of the partnership, which is to provide public services and achieve the public interest, in addition to the roles, responsibilities and advantages that this contractual relationship creates, such as the element of risk distribution, the element of financing, and the time element.

B- Characteristics of public-private partnership contracts

Public-private partnership contracts have a set of unique characteristics that distinguish them from other traditional contracts concluded by the state or one of its public administrations, which are as follows:

B-1 -Multiple contracting parties between the public and private sectors

Public-private partnership contracts are characterised by the multiplicity of parties involved in their implementation, as they bring together two parties: one of them is a public legal entity, represented by the state or one of its public administrations, and a private legal entity, whether national or foreign.

The public sector here refers to all the institutions and bodies affiliated with the state[13], which seek to provide public services as a primary objective and not to make a profit. According to Article 49 of the Algerian Civil Code[14], and Article 1 of the French General Law on the Property of Public Persons[15], this includes the state, regional groups, and public institutions of an administrative nature. The private sector includes persons subject to private law, such as civil and commercial companies and institutions.

Undoubtedly, the multiplicity of parties as previously explained presupposes a conflict of interest among them. The public sector, as a general principle, aims to provide public services and achieve the public interest, while the private sector's primary goal is to generate profit. This makes public-private partnership contracts an effective means of reconciling these conflicting interests. This is achieved by improving the level and quality of services provided to individuals at the lowest possible costs, thus alleviating the financial burdens on the public sector, on the one hand, by involving the private sector in financing project implementation, and contributing to improving the economic efficiency of the private sector by ensuring profit and distributing risks and responsibilities within the framework of this contractual relationship based on partnership[16].

B-2 -The multiple stages of public-private partnership contracts and their complex nature

Public-private partnerships are characterized by multiple stages. They begin with the preparation and design phase, during which the project's needs are identified and feasibility studies are conducted. This is followed by the selection phase, where the partner is selected based on specific criteria and conditions, following a call for proposals and evaluation. This is followed by the implementation and operation phase, during which the private partner assumes responsibility for the design, construction, financing, operation, and maintenance of the project. The public entity oversees and monitors the private partner's compliance with the terms of the PPP contract. The

[12]- United Nation, Public-Private Partnership : A new Concept for Infrastructure Development, Economic Commission for Europe, New York, 1998, p 03
[13]- Mahmoud Ali Al-Sharqawi, Economic Growth and the Challenges of Reality, Ghaida Publishing and Distribution House, Jordan, 2015, p. 70
[14]- Ordinance No. 75-58, dated September 26, 1975, containing the Civil Code, official journal, No. 78 issued on September 30, 1975, amended and supplemented
[15]- Ordinance No. 2006-460 of April 21, 2006 relating to the legislative part of the general code of public property, JORF April 22, 2006
[16]- Al-Naimi Abu Bakr, Ahmed Othman, Modern Methods of Private Sector Participation in the Implementation of Infrastructure Facilities, A Comparative Analytical Study, Dar Al-Hamed for Publishing and Distribution, Jordan, 2012, p. 29

ownership transfer phase concludes with the end of the agreed-upon term, during which the project is handed over and its ownership transferred to the public sector[17]. The importance of this feature lies in its ability to effectively guarantee the sustainable implementation of projects, as these multiple, sequential phases contribute to establishing a fair and transparent partnership relationship, enhancing the protection of public funds and the long-term effectiveness of the project.

As a result of the multi-stage feature, public-private partnership contracts are characterized by a long duration, as each of the stages mentioned above requires a specific period of time to complete. Instead of each stage being concluded under a separate contract, these stages are combined into one long-term contract, which makes partnership contracts long-term contracts, extending for a period of time ranging from 20 to 30 years[18].

B-3 - Risk distribution

Public-private partnerships are based on the principle of risk sharing between the contracting parties, unlike other traditional contract models concluded by the public sector, where the majority of the risk falls on the public sector. This principle is based on the idea of creating an integrated mechanism to ensure contractual balance and achieve harmony between the conflicting interests of the contracting parties. Each party bears responsibility for project-related risks that it can manage, such as risks arising from delayed implementation and the excess of actual costs over estimated project costs.

However, risk sharing does not necessarily mean distributing them equally, but rather means that each party bears the risks that it is able to manage, provided that these risks are determined and distributed within the framework of the terms of the partnership contract, which is what the French legislator stipulated in Article 11 of Ordinance No. 2004-559, as amended and supplemented, which emphasized that the partnership agreement must include clauses related to the conditions for risk sharing between the public sector and the participating contractor[19]. Such as the private sector bearing the risks of construction, erection and operation, in exchange for the public sector bearing the regulatory, legal and political risks, or an agreement to share the risks related to the market, demand or force majeure[20]. In general, it is recommended that, regarding the distribution of risks in public-private partnership contracts, the public sector bear the external risks of the project, in exchange for the private sector bearing the risks related to the project, and that other remaining risks, which neither partner can control, be shared[21].

As a result, the failure to define responsibilities in the terms of public-private partnership contracts, or their poor distribution or mismanagement, makes these partnerships a source of many disputes, which may disrupt project implementation and hasten its failure.

B-4 - Multiple areas of application of public-private partnership contracts

Public-private partnerships are flexible enough to accommodate various vital fields and sectors, encompassing a wide range of applications. This reflects the growing interest of countries in using PPPs as a strategic option for providing public services and achieving public interest in various infrastructure projects. According to the

[17]- Germà Bel ‹Rui Cunha Marques ‹Trevor Brown, Public-Private Partnerships : Infrastructure, Transportation and Local Services, Taylor & Francis, United Kingdom, 2016, p 74
[18]- Neeta Baporikar, Public Private Partnerships for Social Development and Impactp, IGI Globaln, United States, 2015, p 190
[19]- Article 11 paragraph 1 -b of Ordinance No. 2004-559 of June 17, 2004 on partnership contracts, JORF No. 141 of June 19, 2004, Repealed by Ordinance No. 2015-899 of July 23, 2015 - art. 102, Amended by LAW No. 2009-179 of February 17, 2009, Repealed by Ordinance No. 2015-899 of July 23, 2015
[20]- Al-Wasl Kamal Amin, Infrastructure and Public Investment in the Arab World: Between the Necessity of Development and the Dilemma of Financing, Arab Center for Research and Policy Studies, First Edition, Qatar, 2018, p. 51
[21]- Trends and Theory, Public Private Partnerships in Transport, Athena Roumboutsos, United Kingdom, 2015, p 228

Organization for Economic Cooperation and Development (OECD)[22] and the Asian Development Bank (ADB)[23], PPPs focus on transportation infrastructure projects, including highways, airports, ports, railways, bridges, tunnels, and other infrastructure facilities that provide public services. This also applies to water and sanitation facilities, power generation plants, fuel, educational, healthcare, entertainment and sports facilities, and parking lots.

It is concluded according to multiple application models, such as the build-operate-transfer (BOT) model, the build-own-operate (BOO) model, the design-build-finance-operate (DBFO) model, the design-build-finance-maintenance (DBFM) model, and the design-build-finance-maintenance-operate (DBMFO) model[24].

2- Legal adaptation of public-private partnership contracts

Public-private partnership contracts raise a fundamental legal problem, namely determining their nature and legal classification. This issue is of paramount importance, as it forms the basis for determining the legal framework regulating public-private partnership contracts, from the conclusion stage to the implementation stage and any disputes that may arise therefrom. This then clarifies the legal positions of the parties involved, particularly in terms of determining the applicable law, describing mutual contractual rights and obligations, and appointing the competent judicial authority to adjudicate disputes arising therefrom.

This issue has sparked widespread juristic debate, between those who consider public-private partnership contracts to be administrative contracts, those who consider them to be private contracts, and those who see them as having a special nature. This is what we will attempt to highlight in some detail in the following points.

A- Public-private partnership contracts are administrative contracts

Some jurisprudence[25] considers public-private partnership contracts to be administrative contracts. This is the approach adopted by the French legislator, who explicitly stipulated that "the partnership contract is an administrative contract..." in his definition of partnership contracts under Article 1, Paragraph 01 of Ordinance No. 2004-559, as amended and supplemented, relating to partnership contracts. The Algerian legislator also adopted this approach by classifying the public service delegation agreement as an administrative contract under Article 06 of Executive Decree No. 18-199 relating to the delegation of public services[26], which is originally one of the applied models for public-private partnership contracts in Algeria.

An administrative contract is defined as (a contract concluded by a legal entity under public law for the purpose of managing a public facility or in connection with its operation, and which demonstrates its intention to adopt the public law method by including in the contract an exceptional condition or conditions unusual in private law, or by authorizing the contracting party with the administration to directly participate in the management of the

[22]- OECD, Public-Private Partnerships In Pursuit of Risk Sharing and Value for Money, OECD Publishing, France, 2008, p 28
[23]- Asian Development Bank, Public–Private Partnership Monitor Georgia, Asian Development Bank, Philippines, 2024, p 48
[24]- Rohit Manglik, Public Administration, Volume - 3, EduGorilla Publication, India, 2024, p 67
[25]- Among them, see:
Jean-François Boudet, Public Finance Reports - 2nd edition, ELLIPSES, 2015, p. 265
Niels Bernardini, Valentin Lamy, The Essentials of Administrative Contracts, ELLIPSES, Paris, 2016, p. 54
Christiane Féral-Schuhl, Christian Paul, Commission for Reflection and Proposals on Law and Freedoms in the Digital Age, Information Report on Law and Freedoms in the Digital Age, National Assembly, Paris, 2015, p. 42
Adamou Issoufou, The New Public Procurement Law and the Rationalization of Public Spending in Niger and Senegal, Volume 1, Éditions L'Harmattan, Paris, 2017, p. 38
Jean-Claude Ricci, Frédéric Lombard, Administrative Law of Obligations, Sirey, Paris, 2018, p. 103
Issakha Ndiaye, Partnership Contracts public-private and infrastructure development in Senegal, Editions L'Harmattan, Paris, 2015, p 15-16
[26]- Executive Decree No. 18-199 of August 2, 2018, relating to the delegation of public services, official journal, No. 48, of August 5, 2018

public facility)[27]. It is understood from this that for a contract to be administrative, it must be connected to the implementation of a public facility and contain exceptional conditions unusual in private law; otherwise, the contract is considered a private law contract, which the administrative judiciary is not competent to consider and adjudicate[28].

These are the arguments and justifications on which the proponents of this view relied when they argued that public-private partnership contracts are administrative contracts. This is because one party to the partnership contract is a public entity, represented by the state, regional groups, or public institutions of an administrative nature. The subject of the contract is related to a public facility, whereby a public entity entrusts a private entity with financing the investment related to the necessary works and equipment for the public facility, as well as managing, operating, and maintaining them. It also includes exceptional, unusual conditions, such as the public entity's right to amend the contract unilaterally in accordance with the public interest, without requiring the approval of the second party to the contract, represented by a private entity. This departs from the principle that the contract is the law of the contracting parties established in private-law contracts. There are also other advantages whereby the public entity relinquishes some of the privileges of public authority to the private entity, enabling the latter to achieve the objectives of the partnership, such as tax concessions and customs duties. If a company contract lacks one of these elements, the contract is considered a private, not an administrative, contract.

B- Public-private partnerships are private contracts

Another trend in jurisprudence[29] holds that public-private partnership contracts are considered private contracts, subject to the rules of civil and commercial law, and that jurisdiction over disputes arising from them lies with ordinary courts, not administrative ones.

The argument of the proponents of this view is that this type of contract is subject to the principle of the sovereignty of the will and the principle that the contract is the law of the contracting parties, which is regulated by the rules of private law. The exceptional and unusual conditions that distinguish administrative contracts from private contracts are absent, given that in partnership contracts between the public and private sectors, the terms and conditions of the contract are negotiated between the two parties in advance, and based on that, risks, responsibilities and profits are distributed. This is inconsistent with the unilateral authority enjoyed by the public person in the field of administrative contracts, which makes the administration's authority to amend the

[27]- Abdul Aziz bin Muhammad Al-Saghir, Administrative Law between Egyptian and Saudi Legislation, National Center for Legal Publications, First Edition, 2015, Egypt, p. 220

[28]- This is what the French State Council settled on in its decision issued on June 10, 1988, which stated the following: (Considering that the provision of services relating to the survey work, provided by the General Inspection of Quarries to the company, gave rise, in the form of an exchange of letters, to a contract which did not have as its object the execution of a public service or the carrying out of public works or structures, and which did not contain any clause exceeding common law; that it was therefore a private law contract; that consequently, the administrative court does not have jurisdiction to hear the claim for compensation insofar as it is based on the execution of this contract). See Council of State, 1 SS, of June 10, 1988, 92778, unpublished in the Lebon collection, Published on the following website: https://www.legifrance.gouv.fr/ceta/id/CETATEXT000007737161/

[29]- See:
Shamel Hadi Najm Al-Azzawi, Contractor Obligations in Construction and Ownership Transfer (BOT) Contracts, National Center for Legal Publications, First Edition, Egypt, 2016, p. 72
Muhammad Ahmad Kasab Khalifa, Investment Contracts within the Framework of Principles, Guarantees, and Applicable Law, Dar Al-Fikr Al-Jami'i, 2020, Egypt, p. 109
Jihad Zuhair Deeb Al-Harazin, The Effects of the Concession Contract, A Comparative Theoretical Study, Dar Al-Fikr and Al-Qanoon for Publishing and Distribution, First Edition, 2015, Egypt, p. 56

partnership contract by its unilateral will or impose penalties, an idea that is unlikely to be applied in the field of partnership contracts between the public and private sectors.

The objective of concluding public-private partnership contracts differs from the primary objective of concluding administrative contracts, which is limited to the idea of achieving the public interest. This is in contrast to the situation with partnership contracts, which are based on the idea of achieving profit for the benefit of the private sector. The provision of public services and the achievement of the public interest are linked to a guaranteed financial reward and return for the benefit of the private sector under the partnership contract. This makes them private contracts rather than administrative contracts.

In addition, the nature of public-private partnership projects is linked to economic and commercial dimensions, which requires them to be subject to the rules of private law in order to ensure their effectiveness and encourage and attract investment and investor confidence.

C- Public-private partnership contracts are a special nature

A section of jurisprudence[30] has adopted a modern approach that removes partnership contracts from the traditional legal classifications that classify the latter as administrative contracts or private contracts. This jurisprudential trend sees partnership contracts between the public and private sectors as having a special nature, due to their enjoyment of distinctive characteristics that combine within them elements of administrative contracts and private contracts. This makes it difficult to classify these contracts as administrative contracts or private contracts in advance. Rather, to determine their legal nature, each contract must be considered separately. In this case, partnership contracts between the public and private sectors are considered administrative contracts when their elements and pillars are present, and they are considered private contracts when their terms and conditions are present.

The argument of those who hold this view is that public-private partnership contracts are modern contracts that include a set of contractual elements of a special nature that go beyond and are distinct from those elements found in traditional contracts, due to their flexibility, which enables them to adapt to the various stages of the project, such as the element of ownership of the land or facility on which the project is built, the element of revenues and fees, the method of which is stipulated in the contract for sharing and determining them, and the element of risks and responsibilities distributed between the two parties to the contract from the public and private sectors, which can change according to each stage of the project, in addition to the element of financing and the duration of the contract, through which the source of financing for the project and the duration of the contract are determined. All of these elements differ from one contract to another according to the objectives that the will of the parties seeks to achieve, which makes it difficult, as it was, to establish a general classification that applies to all types of partnership contracts. This leads to the necessity of determining the legal nature of each contract separately, according to its elements and the circumstances surrounding it, which ensures that the legal classification of each public-private partnership contract is consistent with the content and reality of the contract[31].

In light of these jurisprudential tensions, the researcher favors the first opinion, which classifies public-private partnership contracts as administrative contracts, given that the second and third jurisprudential opinions, which

[30]- See:
Aqeel Karim Zaghir, Civil Liability of Foreign Investors, Dar Al Fikr Wal Qanun Publishing and Distribution, Egypt, 2015; p. 80
Zakaria Al Masri, Administrative Contracts: Between Legal Obligation and Practical Reality, A Comparative Local and International Study, Dar Al Fikr Wal Qanun, Egypt, 2014, p. 533
Bashar Rashid Hussein Al Mazuri, Contractual Liability of the Administration in the Implementation of Administrative Contracts, A Comparative Study, Arab Center for Publishing and Distribution, Egypt, 2018, p. 119
[31]- Yousef Saadoun Muhammad Al-Maamouri, The Legal Regulation of Maintenance Contracts in Infrastructure Projects, A Comparative Study, Arab Center for Publishing and Distribution, Egypt, 2020, pp. 115-116

advocate the civil and private nature of partnership contracts, have endeavored to adapt them in the absence of a legal framework that regulates and governs this type of contract. However, in light of the successive issuance of legal texts, this issue has become almost settled, as we saw in the first opinion mentioned above, as national legislation in both Algeria and France, for example, tends to classify them as administrative contracts.

II- Practical models for public-private partnership contracts

There are various models for public-private partnership contracts depending on the nature and requirements of the project, including financing, construction, operation, and maintenance phases. Perhaps the most prominent models established by Algerian and French legislators are build-operate-transfer (BOT) contracts, in addition to public utility concession contracts.

1- Build-Operate-Transfer (BOT) contracts

Build-operate-transfer (BOT) contracts derive their legal basis in Algerian law from several legal texts. The Algerian legislator has implicitly recognized this type of contract without explicitly using the term "BOT." This can be inferred from Article 17 of the 2005 Water Law[32], which subjects artificial public water properties to this type of contract, specifying all the stages of a BOT contract: construction, operation, and transfer of ownership. This can also be inferred from Article 64 bis of the 1990 National Property Law, as amended and supplemented[33], which uses the term "concession grant" to refer to a BOT contract, given that the concept and meaning of granting a concession to use national property includes construction, operation, and transfer of ownership.

This is the same legal situation prevailing in French legislation, whose legal texts do not recognize a specific term called Build, Operate, and Transfer (BOT) contracts. However, its components, namely Build, Operate, and Transfer (BOT), have been regulated within the legal framework governing concession contracts, which is governed by the French Public Procurement Law.

However, to elaborate on the provisions and rules governing build-operate-transfer contracts, we must first define this type of contract, and then address its forms, as explained below.

A- Definition of Build-Operate-Transfer contracts

Returning to the entirety of the legal texts regulating this type of contract in Algerian law, we can hardly find a legal definition for build-operate-transfer contracts. This position is consistent with the orientation of other comparative legislation, such as French legislation, which did not provide a single definition for them. This is primarily due to the lack of a specific and detailed legal framework regulating this type of contract, with the exception of some scattered legal texts that focused on the procedural aspect rather than the conceptual one.

Leaving the field to international bodies and jurisprudence, which provided several definitions of build-operate-transfer contracts, as the United Nations Model Law Commission (UNCITRAL) defined it as: (form of project financing where a government grants a concession for a period of time to a private consortium (hereafter referred to as the "project company") for the development of a project; the project company then builds, operates and manages the project for a number of years, recoups the construction costs and derives its profit from the

[32] Law No. 05-12 of August 4, 2005, relating to water, published in the official journal of the Algerian Republic, No. 60, issued on August 28, 2005

[33]- Law No. 90-30 of December 1, 1990, containing the National Property Code, published in the official journal of the Algerian Republic, No. 53, issued on December 5, 1990, amended and supplemented by Law No. 08-14, dated July 20, 2008, official journal, No. 44, issued on July 27, 2008

proceeds generated by the operation and commercial exploitation of the project. At the end of the concession period, the project is transferred to the government)[34].

On the other hand, the jurisprudence side has defined build-operate-transfer contracts as (those projects that the government entrusts to a company, whether national or foreign, whether a public or private sector company, and is called a project company to establish a public facility and operate it on its behalf for a period of time, then its ownership is transferred to the state or the administrative authority)[35].

Others in jurisprudence defined it as (a contractual process through which a number of private companies come together under the name of the project company, which undertakes the financing, construction and operation of a public facility granted by the state for a specific period, on the condition that the project company is obligated to return the project to the party granting the obligation at the end of the contract period)[36].

Another aspect of jurisprudence defined it as: (Type of project delivery framework in which a private entity designs, finances, builds, and operates a facility for a specified period. After the operational period, the facility is transferred back to the public sector or the project sponsor)[37].

The above definitions appear to be precise and clear, as they accurately identify the parties to the contract, the purpose of establishing the project, its duration, and its final outcome, which is the transfer of ownership. Furthermore, they address all the main stages of a BOT contract, namely construction, operation, and transfer of ownership. However, what is flawed about them is their failure to address the potential risk element that can arise from BOT contracts, such as the risks associated with construction or operation. They also do not clarify the details related to the company's recovery of its profits in exchange for operating the public facility.

There are some scholars of jurisprudence who define build-operate-transfer contracts as: (an agreement between two parties, one of whom is the owner of the property and the other is responsible for establishing a project on it, in exchange for owning it for his benefit for a specified period)[38]. What can be noted through this definition is its extreme simplicity and its reduction of BOT contracts to two basic ideas: the first is the establishment of the project, and the second is the benefits of the project. As a result, it neglects the basic elements upon which the contract is based, particularly the element of project financing, the element of transferring ownership of the project at its end, and the element of risks associated with establishing the project.

Based on the above definitions of build-operate-transfer (BOT) contracts, what we can conclude is that defining what is meant by this type of contract requires encompassing all the basic elements upon which the contract is based, particularly in terms of identifying the parties to the contract, the purpose of establishing the project, its duration, the potential risks that may arise from it, and the financial details. In addition, it must encompass all of its main stages, namely construction, operation, and transfer of ownership.

B- Forms of build-operate-transfer contracts

The development and practical application of build-operate-transfer contracts have led to the emergence of numerous new forms derived from the original model, each with its own unique characteristics that distinguish it from others. It is necessary to be familiar with these forms in order to choose the form that best suits the

[34]- UNITED NATIONS, GENERAL ASSEMBLY, A/CN.9/414, 3 March 1995, Published on the following website: https://docs.un.org/en/A/CN.9/414

[35]- Issam Ahmed Al-Bahji, BOT Contracts, the Way to Build Modern State Facilities, An Analytical Study of the Legal and Contractual Regulation of Privately Financed Infrastructure Projects Using the Build, Own, Operate and Transfer of Ownership to the State Method, Dar Al-Jamia Al-Jadida, Egypt, 2008, p. 13

[36]- Saddam Muhammad Abboudi Al-Awaisheh, Arbitration in Administrative Contract Disputes: A Comparative Study, Egyptian Publishing and Distribution, Egypt, 2020, p. 79

[37]- Saji Daniel, Legal aspects of Construction, SGSH Publications, India, 2025, p 45

[38]- Khalid bin Saud bin Abdullah Al-Rashoud, Innovative Contracts for Financing and Investment with Islamic Sukuk, Dar Kunuz Ishbilia for Publishing and Distribution, Saudi Arabia, 2013,p. 95

requirements of the project to be implemented and achieve its objectives efficiently and effectively, according to the following details:

B-1 - Build, Own, Operate, and Transfer (B.O.O.T) Contract

It is a contract whereby the state grants a private sector company the concession to build a project, establish its structures and equipment, manage it, and operate it throughout the duration of the contract at its own expense, in return for obtaining the agreed-upon profits from the revenues of fees paid by users of the facility, with the right of the company holding the concession to own the project throughout the duration of the contract; provided that its ownership is transferred at the end of the contract period to the state granting the concession[39].

This B.O.O.T contract differs from the Build, Operate, and Transfer (B.O.T) contract in that it allows the project company to own the project during the contract period, provided that it is transferred to the state at the end of this period. Whereas in B.O.T contracts, the state or one of its public entities is the owner of the project from its beginning until its end, since in this type of contract the project is established in the name and on behalf of the public entity.

B-2 - Build, Own, Operate (B.O.O) contract

It is a contract by which the state undertakes to an investor to establish, establish, operate and own a project, allowing the project company to fully and permanently exploit the facility. The ownership of the project is transferred to the company pursuant to this contract after its construction and erection, and it proceeds to operate it on that basis, without this being linked to a specific time period, and without the company having any obligation to subsequently transfer ownership of the project to the state.

Accordingly, the B.O.O. contract differs from the previous B.O.T. and B.O.O.T. contracts in that the ownership of the project does not transfer to the state after the expiration of the contract term. Rather, the project company retains ownership and manages it indefinitely. On this basis, this type of contract can be considered a form of complete privatization of the public facility, which makes it rarely used, as most countries are reluctant to conclude it, especially in the sector of constructing major public facilities[40].

B-3 - Build, Rent, and Transfer (B.R.T) Contract

It is a contract by which the state pledges to an investor to build and establish a project or facility at his own expense, operate it, and lease it to others during the term of the contract, enabling him to cover the costs of the project and achieve a percentage of the profits from the rental value, provided that he is committed at the end of the contract to transfer ownership of the project to the state[41].

B-4 - Build, Own, Lease and Transfer (B.O.L.T) Contract

It is a contract whereby the state allows an investor to build a project and lease it to a third party to operate it for the duration of the contract, provided that the investor is committed at the end of the concession period to transfer ownership of the project to the state granting the concession[42].

Based on the above, we conclude that both the Build-Own-Lease-Transfer (BOLT) and the Build-Rent-Lease-Transfer (B.R.T) contracts share the same cost-recovery element, whereby a percentage of the profits are realized from the rental fees paid by the project operators, pursuant to the lease agreement concluded between the project company and third parties, rather than being recovered from the total fees paid by the users of the facility, as is

[39]- Muhammad Ahmad Kasab Khalifa, op.cit, pp. 78-79
Céline Nauges ،Jean-Daniel Rinaudo ،Katherine A. Daniell ،Noel Wai Wah Chan ،Quentin Grafton, Understanding and Managing Urban Water in Transition, Springer Netherlands, 2015, pp. 448-449
[40]- Ruwantissa Abeyratne, Law and Regulation of Aerodromes, Springer International Publishing, Switzerland , 2014, p 157
[41]- Muhammad Ahmad Kasab Khalifa, op.cit , p. 79
[42]- Bhavesh Patel, Project Management, Vikas Publishing House, India, 2024, p 742

the case with other forms of BOT contracts. However, they differ in the ownership element, which allows the company temporary ownership of the project in the B.O.L.T. contract, while the B.O.L.T. contract grants the company the right to lease or use the property without ownership.

B-5 - Build, Transfer, Operate (B.T.O) Contract

It is a contract whereby the state pledges to an investor to build a project and transfer its ownership to the state upon completion of construction as a first phase. The state then concludes a second agreement with the investor as a second phase to operate and exploit the project during the contract period, in exchange for an agreed-upon percentage of profits that covers construction costs[43].

What distinguishes this type of contract from others is that the state becomes the owner of the project from the outset, not at the end of the concession period. Thus, the state owns the project throughout all its phases, since the project in the Build, Transfer, Operate (B.T.O.) contract is established on behalf of the state.

B-6 - Modernization, Ownership, Operation, and Transfer (M.O.O.T) Contract

It is a contract by which the state pledges to one of the investors to modernize one of the existing projects, in a way that makes the facility capable of efficiency, by providing it with the latest technological equipment and modern management and operation framework, as well as owning and operating it during the term of the contract, provided that ownership of the project is transferred to the state at the end of the concession[44].

B-7 -Design, Build, Finance and Operate (D.B.F.O) Contract

It is a contract by which the state pledges to an investor to build a project and finance it at his own expense, and to manage and operate it with machinery, equipment and devices, in accordance with the technical conditions, designs and controls specified by the state[45].

B-8 -Lease, Renew, Operate, and Transfer (L.R.O.T) Contract

This is a contract whereby the state leases an existing project to an investor to renovate, maintain, and operate it for a specific period of time, charging fees for the service provided. At the end of the contract, the investor undertakes to transfer ownership of the project to the state[46].

2- Public utility concession contracts

Public utility concession contracts are one of the most prominent and important forms of public-private cooperation, and the most widely used. They are regulated by Algerian law under Presidential Decree No. 15-247 and Executive Decree No. 18-199, and by French law under the French Public Procurement Law of 2018. Accordingly, in this section, we will attempt to define what is meant by this type of contract and then explain its forms.

A- Definition of public utility delegation contracts

The general principle is that the task of defining terms is not at the core of the legislator's priorities, as much as the organizational aspects, as this task is usually left to jurisprudence and the judiciary. However, in the field of contracts for the delegation of public services, we find that the legislator has broken this rule, given the

[43]- Volker Birken, BOT-Models as Instrument for Strategic Competitive Advantages in the Automotive Industry, Diplom.de, Germany, 2004, p 30
[44]- Hassan Al-Bannan, The Principle of the Susceptibility of Public Utilities Rules to Change and Development: A Comparative Study, National Center for Legal Publications, First Edition, Egypt, 2014, p. 209
[45]- Jihad Zuhair Deeb Al-Harazino, op.cit, p. 53
[46]- Adrian J. Smith, Privatized Infrastructure, The Role of Government, Thomas Telford, United Kingdom, 1999, p 74

importance of the contract itself on the one hand, and its novelty as a new method of management and administrative contracting on the other hand.

These are the foundations upon which the French legislator relied, as he defined the public service delegation contract through Article 38 of Law No. 93-122, which was repealed[47], stating that: "A public service delegation is a contract by which a legal entity governed by public law entrusts the management of a public service for which it is responsible to a public or private delegate, whose remuneration is substantially linked to the results of the operation of the service. The delegate may be responsible for constructing works or acquiring goods necessary for the service".

However, amid legislative developments in French laws regulating this type of contract, Order No. 65-2016 changed the term "public utility concession contracts" to "concession contracts," in compliance with the 2014 European Union Directive on Concession Contracts, as part of efforts to standardize terminology and legal rules across the European Union.

The evidence for this is what is stated in Article 1411-1 of the French General Law of Regional Communities[48], which states: (A public service delegation is a concession contract within the meaning of Ordinance No. 2016-65 of 29 January 2016 relating to concession contracts, concluded in writing, by which a delegating authority entrusts the management of a public service to one or more economic operators, to whom a risk linked to the operation of the service is transferred, in return either for the right to operate the service which is the subject of the contract, or for this right accompanied by a price).

Based on this new approach, the French legislator, in its definition of the public utility concession contract pursuant to Article 5 of the repealed Ordinance No. 65-2016[49], stated that: (Concession contracts are contracts concluded in writing, by which one or more granting authorities subject to this ordinance entrust the execution of works or the management of a service to one or more economic operators, to whom a risk linked to the operation of the work or service is transferred, in return either for the right to operate the work or service which is the subject of the contract, or for this right accompanied by a price).

This change was finally confirmed with the issuance of the French Public Procurement Law of 2018[50], which combined public utility concession contracts under the term “concession contract,” defining it under Article 1121-1 as: (A concession contract is a contract by which one or more granting authorities subject to this code entrust the execution of works or the management of a service to one or more economic operators, to whom a risk linked to the operation of the work or service is transferred, in return either for the right to operate the work or service which is the subject of the contract, or for this right accompanied by a price)

As for the Algerian legislator, he did not provide a definition for public service delegation contracts within the texts of Presidential Decree 15-247, but he referred regarding his definition to the texts of Executive Decree No. 18-199, which stipulated in Article Two that (the delegation of public service, in the concept of this decree, means transferring some non-sovereign tasks of the public authorities, for a specific period, to the delegate, with the aim of the public interest).

By carefully reading the definitions above, we can clearly see the difference between the definition provided by the French and Algerian legislators. The French legislator was more precise and specific in its definition of the

[47]- Law No. 93-122 of 29 January 1993 on the prevention of corruption and transparency in economic life and public procedures, Amended by Law No. 2014-873 of 4 August 2014 - art. 16, Repealed by Ordinance No. 2016-65 of 29 January 2016 - art. 77

[48]- Article L 1411-1 of the General Code of Local Authorities, Consolidated version of April 16, 2018, Amended by Ordinance No. 2016-65 of January 29, 2016 - art. 58

[49]- Ordinance No. 2016-65 of January 29, 2016 relating to concession contracts. Official Journal of the French Republic, No. 0025, January 30, 2016. Repealed by Ordinance No. 2018-1074 of November 26, 2018

[50]- Ordinance No. 2018-1074 of November 26, 2018 containing the legislative part of the public procurement code, JORF No. 0281 of December 5, 2018

public utility concession contract, as it included all the elements upon which the contract is based, such as the duration of the concession, the form of the concession, and the parties to the concession, while emphasizing the criterion of transferring economic risks to the concessionaire, the owner of the concession. This is in contrast to the Algerian legislator, who was content to focus on the form of the public utility concession agreement and its objectives, without specifying the element of transferring economic risks.

By carefully reading the definitions above, we can clearly see the difference between the definition provided by the French and Algerian legislators. The French legislator was more precise and specific in its definition of the public service delegation contract, as it included all the elements upon which the contract is based, such as the duration of the delegation, the form of the delegation, and the parties to the delegation, while emphasizing the criterion of transferring economic risks to the delegatee. This is in contrast to the Algerian legislator, who was content to focus on the form of the public service delegation agreement and its objectives, without specifying the element of transferring economic risks.

However, this does not prevent us from saying that the intervention of the Algerian legislator by setting the provisions applicable to public utility delegation contracts, under Presidential Decree No. 15-247 and Executive Decree No. 18-199, is a real bet and gain for the administrative legal framework in Algeria, given that it includes new provisions, as it stipulates the principles governing the public utility delegation contract, as well as the forms of delegation, and the formulas for concluding the public utility delegation agreement.

B- Forms of public utility delegation contracts

The Algerian legislator, through Article 210 of Presidential Decree No. 15-247 and Article 52 of Executive Decree No. 18-199, has provided several forms that the delegation of a public service may take, taking into account the level of delegation, the risk borne by the delegatee, and the oversight of the delegating authority. The delegation may take the form of a concession, a lease, an incentive agency, or management. The delegation of a public service may also take forms other than those listed above, in accordance with the terms and conditions specified by the regulations.

While these traditional forms are no longer classified as public utility concession contracts under the French Public Procurement Law of 2018, they have been merged as a form of concession contracts into two forms, based on the criterion of transfer of operational risk. The first form is the works concession contract, which primarily aims to:

1° Either the execution, or the design and execution of works listed in a notice annexed to this code;

2° Either the execution, or the design and execution, by any means whatsoever, of a work meeting the requirements set by the contracting authority[51].

The second form is the service concession contract, the purpose of which is: (Management of a service. It may consist of granting the management of a public service. The concessionaire may be responsible for constructing a structure or acquiring goods necessary for the service)[52].

Taking into consideration in this context that a concession contract relating to works and services is considered a concession for works when its main purpose is to carry out works[53].

Returning to the forms of public utility delegation contracts in Algerian legislation, they include:

B-1 Concession

[51]- Article L1121-2 of the 2018 Public Procurement Code
[52]- Article L1121-3 of the 2018 Public Procurement Code
[53]- Article L1121-4 of the 2018 Public Procurement Code

In Algerian law, a concession means the form through which the delegated authority entrusts the concessionaire with either the construction of facilities or the acquisition of property necessary for the establishment of the public facility, or it entrusts him only with the exploitation of the public facility[54].

Accordingly, the public utility concession contract allows the licensee to exploit the public utility in his own name and on his own responsibility, under the supervision of the delegating authority, provided that the licensee finances the construction, acquisition of property, and exploitation of the public utility himself, in exchange for receiving royalties from the users of the public utility.

B-2 Lease Contract

It is the entrusting of the delegated authority to the delegatee to manage and maintain a public facility, in exchange for an annual fee paid to it. The concessionaire then acts on his own behalf and under his own responsibility. The delegating authority itself finances the establishment of the public facility. The concessionaire's wages are paid by collecting fees from users of the public facility.[55].

Hence, the concession differs from the lease in terms of their subject matter. This is based on the fact that in the concession method, the licensee undertakes the tasks of constructing facilities or acquiring property necessary for the establishment of the public facility at their own expense, while in the lease method, these tasks fall upon the delegating authority, such that the lessee (licensee) is solely responsible for the exploitation and provision of the service. They also differ in that in the concession method, financing falls upon the licensee, while in the lease method, the financing burden falls upon the delegating authority itself. They also differ in terms of the commitment period, which we find to be somewhat long in the concession method, such that the maximum concession period ranges within the limits of 30 years, extendable once by an addendum at the request of the delegating authority on the basis of material investments not stipulated in the agreement, provided that the extension period does not exceed a maximum of 4 years, compared to the lease method, whose period does not exceed a maximum of 15 years, extendable once by an addendum at the request of the delegating authority on the basis of material investments not stipulated in the agreement, provided that the extension period does not exceed a maximum of 3 years[56].

B-3 Incentivized Agency Contract

It is that the delegated authority entrusts the delegatee with managing or managing and maintaining the public facility, and the delegatee exploits the public facility on behalf of the delegated authority, which itself finances the establishment of the public facility and maintains its management. The concessionaire's wages are paid directly by the delegating authority through a grant determined as a percentage of the turnover, to which a production bonus and a share of the profits are added, when necessary. The delegating authority, in conjunction with the concessionaire, determines the rates paid by users of the public facility, and the concessionaire collects the rates on behalf of the concerned delegating authority.

Compared to the concession and lease methods, the maximum term of a public utility concession agreement in the form of an incentive agency is set at 10 years, extendable once by an addendum at the request of the delegating authority on the basis of material investments not stipulated in the agreement, provided that the extension period does not exceed a maximum of two years[57].

B-4 Management Contract

[54]- Article 210, Paragraph 1 of Presidential Decree No. 15-247, as well as Article 53, Paragraph 1 of Executive Decree No. 18-199
[55]- Article 210, Paragraph 02 of Presidential Decree 15-247 and Article 54 of Executive Decree No. 18-199
[56]- Article 54, paragraphs 4 and 5 of Executive Decree No. 18-199
[57]- Article 210, Paragraph 03 of Presidential Decree No. 15-247 and Article 55 of Executive Decree No. 18-199

It is that the delegated authority entrusts the delegatee with managing or managing and maintaining the public facility, and the delegatee uses the public facility on behalf of the delegated authority, which itself finances the public facility and maintains its management. The concessionaire's wages are paid directly by the delegating authority through a grant determined as a percentage of the turnover, to which a production bonus is added. The delegating authority determines the rates paid by users of the public facility and retains the profits. In the event of a deficit, the delegating authority compensates the manager, who receives a lump sum fee. The concessionaire collects the rates on behalf of the relevant delegating authority.

In any case, the duration of the delegation agreement in the form of management may not exceed 5 years[58].

Conclusion:

Through our study of the legal framework for public-private partnership contracts, we have reached a number of conclusions that can be summarized in the following points:

- Defining the precise meaning of public-private partnership contracts in light of jurisprudential and legislative positions requires, through a comparison between them, to include a set of basic elements, particularly in terms of the necessity of identifying the parties to the partnership, represented by both the public and private sectors, as well as defining the primary objective of the partnership, represented by providing public services and achieving the public interest, in addition to the roles, responsibilities and advantages created by this contractual relationship, such as the element of risk distribution, the element of financing, and the time element.

- Both Algerian and French legislators have adopted public-private partnership contracts within their legal framework. This allows the public sector to benefit from the expertise of the private sector, particularly with regard to the transfer of modern technology, energies, and resources. This is achieved by granting the private sector the privilege of financing, constructing, managing, operating, or developing basic infrastructure projects.

- The adoption of public-private partnership contracts by the Algerian and French legislators came under different synonymous names, whether in terms of meaning, structure, constituent elements, nature, purpose and objective. While the French legislator combined partnership contracts within concession contracts in the form of works concession contracts and services concession contracts, the Algerian legislator adopted this type of contract under the name of concession contracts and public utility delegation contracts, which requires the legislator to intervene to unify the terminology to avoid any ambiguity or contradiction.

- The feasibility of a public-private partnership (PPP) project hinges on the fulfillment of a set of important elements and principles, most notably the risk element, which should be identified and distributed within the terms of the PPP contract, similar to other elements. This has implications that could impact the rights and obligations of the parties, whether due to failure to identify them, poor distribution, or poor management. This could make this partnership a source of many disputes, which could disrupt the project's implementation and hasten its failure.

- Jurisprudence has found it difficult to settle on a single legal classification for public-private partnership contracts, given their novelty and complex nature, which combines elements of both public and private law. Some classify them as administrative contracts, others as private contracts, and others as special in nature. However, both Algerian and French legislators have settled this issue by classifying public-private partnership contracts as administrative contracts. This makes the practical models of these contracts administrative contracts by law, and administrative disputes are the domain of the administrative judiciary.

- The absence of a comprehensive and unified legal framework regulating public-private partnership contracts in Algeria, which requires the issuance of a special and detailed legal framework for this type of contract, similar to what has been established in comparative state legislation, as is the case with the French legislature.

[58]- Article 210, Paragraph 4 of Presidential Decree No. 15-247, as well as Article 56 of Executive Decree No. 18-199

Acknowledgement

The author expresses sincere gratitude to the University Centre of Maghnia for providing academic support and access to essential resources that made this research possible. Special thanks are extended to colleagues and peers in the Faculty of Law and Political Science for their constructive comments and encouragement throughout the preparation of this study.

Conflict of Interest

The author declares no known financial or personal conflicts of interest that could have influenced the research, analysis, or conclusions presented in this paper.

References

1. Abdul Aziz bin Muhammad Al-Saghir. (2015). *Administrative law between Egyptian and Saudi legislation* (1st ed.). National Center for Legal Publications.
2. Adamou, I. (2017). *The new public procurement law and the rationalization of public spending in Niger and Senegal* (Vol. 1). Éditions L'Harmattan.
3. Smith, A. J. (1999). *Privatized infrastructure: The role of government*. Thomas Telford.
4. Al-Naimi, A. B., & Othman, A. (2012). *Modern methods of private sector participation in the implementation of infrastructure facilities: A comparative analytical study*. Dar Al-Hamed for Publishing and Distribution.
5. Al-Wasl, K. A. (2018). *Infrastructure and public investment in the Arab world: Between the necessity of development and the dilemma of financing* (1st ed.). Arab Center for Research and Policy Studies.
6. Aqeel, K. Z. (2015). *Civil liability of foreign investors*. Dar Al Fikr Wal Qanun Publishing and Distribution.
7. Asian Development Bank. (2024). *Public–private partnership monitor: Georgia*. Asian Development Bank.
8. Al Mazuri, B. R. H. (2018). *Contractual liability of the administration in the implementation of administrative contracts: A comparative study*. Arab Center for Publishing and Distribution.
9. Patel, B. (2024). *Project management*. Vikas Publishing House.
10. Laishram, B., Devkar, G., & Dolla, T. (2023). *Revisiting public–private partnerships: Lessons from COVID-19*. Springer International Publishing.
11. Greve, C., & Hodge, G. A. (2005). *The challenge of public–private partnerships: Learning from international experience*. Edward Elgar Publishing.
12. Babaoğlu, C., Akman, E., & Kulaç, O. (2020). *Handbook of research on global challenges for improving public services and government operations*. IGI Global.
13. Féral-Schuhl, C., & Paul, C. (2015). *Commission for reflection and proposals on law and freedoms in the digital age: Information report on law and freedoms in the digital age*. National Assembly.
14. Sorace, D., Piazza, I., & Ferrara, L. (2020). *The changing administrative law of an EU member state: The Italian case*. Springer.
15. Bel, G., Marques, R. C., & Brown, T. (2016). *Public–private partnerships: Infrastructure, transportation and local services*. Taylor & Francis.
16. Dheeb, H. A. (2017). *Fundamentals of strategic planning*. Al-Yazouri Scientific House.
17. Al-Bannan, H. (2014). *The principle of the susceptibility of public utilities rules to change and development: A comparative study* (1st ed.). National Center for Legal Publications.
18. Ndiaye, I. (2015). *Partnership contracts, public–private and infrastructure development in Senegal*. Éditions L'Harmattan.

19. Al-Bahji, I. A. (2008). *BOT contracts, the way to build modern state facilities: An analytical study of the legal and contractual regulation of privately financed infrastructure projects using the build, own, operate and transfer method*. Dar Al-Jamia Al-Jadida.
20. Ricci, J.-C., & Lombard, F. (2018). *Administrative law of obligations*. Sirey.
21. Boudet, J.-F. (2015). *Public finance reports* (2nd ed.). Ellipses.
22. Al-Harazin, J. Z. D. (2015). *The effects of the concession contract: A comparative theoretical study* (1st ed.). Dar Al-Fikr and Al-Qanoon.
23. Al-Rashoud, K. S. A. (2013). *Innovative contracts for financing and investment with Islamic sukuk*. Dar Kunuz Ishbilia.
24. Al-Sharqawi, M. A. (2015). *Economic growth and the challenges of reality*. Ghaida Publishing and Distribution House.
25. Khalifa, M. A. K. (2020). *Investment contracts within the framework of principles, guarantees, and applicable law*. Dar Al-Fikr Al-Jami'i.
26. Ali, M. M. A. S. (2020). *The role of public–private partnerships in providing public services*. Egyptian Publishing and Distribution.
27. Baporikar, N. (2015). *Public–private partnerships for social development and impact*. IGI Global.
28. Bernardini, N., & Lamy, V. (2016). *The essentials of administrative contracts*. Ellipses.
29. OECD. (2010). *Dedicated public–private partnership units: A survey of institutional and governance structures*. OECD Publishing.
30. OECD. (2008). *Public–private partnerships: In pursuit of risk sharing and value for money*. OECD Publishing.
31. Scheffler, R. M. (2016). *World scientific handbook of global health economics and public policy* (Vols. 1–3). World Scientific Publishing.
32. Manglik, R. (2024). *Public administration* (Vol. 3). EduGorilla Publication.
33. Al-Awaisheh, S. M. A. (2020). *Arbitration in administrative contract disputes: A comparative study*. Egyptian Publishing and Distribution.
34. Daniel, S. (2025). *Legal aspects of construction*. SGSH Publications.
35. Al-Azzawi, S. H. N. (2016). *Contractor obligations in construction and ownership transfer (BOT) contracts* (1st ed.). National Center for Legal Publications.
36. United Nations Economic Commission for Europe. (1998). *Public–private partnership: A new concept for infrastructure development*. United Nations.
37. Birken, V. (2004). *BOT-models as instruments for strategic competitive advantages in the automotive industry*. Diplom.de.
38. World Bank. (2024). *Caribbean infrastructure public–private partnership roadmap*. World Bank Publications.
39. Al-Maamouri, Y. S. M. (2020). *The legal regulation of maintenance contracts in infrastructure projects: A comparative study*. Arab Center for Publishing and Distribution.
40. Al Masri, Z. (2014). *Administrative contracts: Between legal obligation and practical reality: A comparative local and international study*. Dar Al Fikr Wal Qanun.
41. Meng, Z., Dang, X., & Gao, Y. (2019). *Public–private partnership for desertification control in Inner Mongolia*. Springer Nature Singapore.
42. Nauges, C., Rinaudo, J.-D., Daniell, K. A., Chan, N. W. W., & Grafton, Q. (2015). *Understanding and managing urban water in transition*. Springer.
43. Abeyratne, R. (2014). *Law and regulation of aerodromes*. Springer International Publishing.
44. Roumboutsos, A. (2015). *Public–private partnerships in transport: Trends and theory*. Routledge.
45. United Nations General Assembly. (1995, March 3). *A/CN.9/414*. https://docs.un.org/en/A/CN.9/414
46. Council of State (France). (1988, June 10). Decision no. 92778. https://www.legifrance.gouv.fr/ceta/id/CETATEXT000007737161/

47. Law No. 05-12 of August 4, 2005, relating to water, Official Journal of the Algerian Republic, No. 60 (August 28, 2005).
48. Law No. 90-30 of December 1, 1990, containing the National Property Code, Official Journal of the Algerian Republic, No. 53 (December 5, 1990), amended by Law No. 08-14 (July 20, 2008).
49. Law No. 93-122 of January 29, 1993, on the prevention of corruption and transparency in economic life and public procedures, amended by Law No. 2014-873 (August 4, 2014), repealed by Ordinance No. 2016-65 (January 29, 2016).
50. France. (2018). *The general code of local authorities* (Consolidated version of April 16, 2018).
51. Ordinance No. 2004-559 of June 17, 2004, on partnership contracts, JORF No. 141 (June 19, 2004), repealed by Ordinance No. 2015-899 (July 23, 2015).
52. Ordinance No. 2006-460 of April 21, 2006, relating to the legislative part of the general code of public property, JORF (April 22, 2006).
53. Ordinance No. 2016-65 of January 29, 2016, relating to concession contracts, Official Journal of the French Republic, No. 0025 (January 30, 2016), repealed by Ordinance No. 2018-1074 (November 26, 2018).
54. Ordinance No. 2018-1074 of November 26, 2018, containing the legislative part of the public procurement code, JORF No. 0281 (December 5, 2018).
55. Ordinance No. 75-58 of September 26, 1975, containing the Civil Code, Official Journal of the Algerian Republic, No. 78 (September 30, 1975).
56. Presidential Decree No. 15-247 of September 16, 2015, regulating public procurement and public service concessions, Official Journal of the People's Democratic Republic of Algeria, No. 50 (October 1, 2015).
57. Executive Decree No. 18-199 of August 2, 2018, relating to the delegation of public services, Official Journal of the People's Democratic

RESEARCH ARTICLE

Administrative Responsibility for Digital Technical Failures in the Era of Government Digitization: Challenges of Digital Governance and Accountability

Hanifi Hadda
Faculty of Law and Political Sciences, University of Abderrahmane Mira - Béjaia
Russian Federation
Email: hadda.hanifi@univ-bejaia.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Digital Government, Digitization, Administrative Responsibility, Technical Failures.

Abstract
The world is witnessing a widespread digital transformation that has led to an increasing reliance on digital technology in various fields, including public administration and government institutions. Transformation is no longer just an option, but rather a strategic necessity to enhance efficiency and transparency and achieve sustainable development goals. Digital governance represents a new management framework based on exploiting modern technology to organize administrative processes and provide public services electronically, which contributes to improving citizens' lives and increasing their satisfaction with government performance. Our current study aims to shed light on government digitization, its most important principles, the digital technical failures that can occur, and their main causes, concluding with an examination of the administration's responsibility for these digital technical failures.

Citation. Hadda H. (2025). Administrative Responsibility for Digital Technical Failures in the Era of Government Digitization: Challenges of Digital Governance and Accountability. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 182–209. https://doi.org/10.56352/sei/8.11.14

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.02.2025 | Accepted: 01.07.2025 | Published: 28.08.2025 (available online)

Introduction:

In the sphere of administration, digitalization has become a pressing need, particularly when it comes to administering public facilities or services. This has been linked to the idea of e-management and e-government, in which citizens get public services via digital platforms and channels. Therefore, when compared to traditional administration, electronic administration marked a significant turning point in terms of the efficient, quick, and transparent services it offers to individuals. However, there may be hazards associated with the digital transformation of government-provided public infrastructure and services that result in harm to citizens for which the state is liable. Stated differently, the administrative obligation incurred in cases of significant and non-serious service errors/flaws is not eliminated by the digitization of public services. Therefore, it is important for both e-service providers and consumers to understand how the legal system handles service faults that result from using public e-services. When determining administrative accountability for damages inflicted on consumers of public e-services, the administrative judiciary makes a distinction between proven error, presumed error, and no error.

Study Problem:

Administrative liability, particularly administrative liability for electronic damages, has evolved toward compensating those harmed by administrative activity, requiring the presence of an element of fault for such liability to be established. The old principle was that the state was not liable for its harmful actions, given its authority and sovereignty, and that its liability was limited to exceptions. However, this changed as a result of the state's transformation from a guardian state to an intervening state in many activities that were previously the exclusive domain of individuals. As a result of the tremendous scientific and technological developments in all fields, and in connection with the state's practice of these activities, harm may be inflicted on individuals and those dealing with it without any fault being attributed to the administrative body. Given the inadequacy of the fault theory, the theory of objective administrative liability emerged, which does not require the element of fault and is satisfied with the two elements of damage and causation. It was therefore necessary to search for a legal basis for this liability, which is based primarily on consideration of the principle of justice and equality before public burdens. Hence, our current study seeks to answer the following question:

What is the legal basis upon which administrative liability for digital technical malfunctions is based?

Study Objectives:

Our current study seeks to achieve the following objectives:

- Understand the concept and principles of digital governance.
- Highlight the causes of digital technical failures.
- Understand the legal basis for management liability for digital technical failures.

Study Methodology:

The current study relies on an analytical approach to understand the concept and principles of digital governance, analyze the causes of digital technical failures, and determine the legal basis for management's liability for digital technical failures.

1. Digital Governance:

1.1. The Concept of Digital Governance:

Digitization is a modern concept that emerged with the emergence of information and communication technology, which resulted in a shift from using traditional methods of transmitting information and knowledge to using numbers to transmit this information and knowledge. The concept of digitization basically refers to taking theoretical information and encoding it into zeros so that computers can store, process and transmit it[1].

Digitization is defined as the social transformation resulting from the massive reliance on digital technologies to obtain, process, and share information. Thus, digitalization depends on the development of Internet access technologies and advanced software[2].

It is also known as the ability of a state and its people to use digital technologies to generate, process, and exchange information. Its concept is also linked to the concept that describes all of the social, economic, and political changes associated with the mass adoption of information and communications technology[3].

[1] Jason Bloomberg, Digitization and Digital Transformation: Confuse Them At Your Peril, 2018, P. 6.

[2] Raul Katz, Koutroumpis Pantelis, Measuring Socio - Economic Digitation A Paradigm Shift, U.S.A, 2012, P. 35.

[3] M Ruiz and Alejandra Soto, National Digital Strategy, National Digital Strategy Coordinator, Mexico, 2013, P. 13.

Accordingly, digital governance can be defined as the public sector's use of information and communications technology, including the Internet, mobile devices, and other tools, to improve and enhance the efficiency and effectiveness of providing information and services to citizens. Digital governance encourages active citizen participation[1].

1.2. The Importance of Digital Governance:

According to the World Bank (2002), the importance of digital governance is manifested in the following elements[2]:

- Simplifying the process of information accumulation for citizens and businesses.
- E-governance enables citizens to gather and access information related to government policies.
- Participation in the decision-making process.
- E-governance promotes democratic values by ensuring citizen participation at all levels in the governance process.
- E-governance automates various services and provides citizens with a surplus of information related to public welfare.
- E-governance ensures accountability and transparency in government transactions and public sector agencies.
- E-governance helps coordinate and monitor the activities of various government agencies.
- Proper implementation of e-governance helps citizens access public services online, thus saving citizens time and money from having to physically visit government offices.
- Adopting an e-governance policy is beneficial for the delivery of public services to citizens.

1.3. Principles of Digital Governance:

In the era of digital transformation, governments around the world are increasingly relying on information and communications technologies to provide more efficient and effective services to citizens. Digital governance is based on a set of fundamental principles that guide the digital transformation process and help achieve government goals. The basic principles of digital governance can be addressed as follows:

1.3.1. Transparency:

Transparency is one of the fundamental principles of digital governance. It refers to the provision of government information in an open and accessible manner to the public. The main goal of transparency is to reduce the gap between the government and citizens by disclosing all information related to government decisions and policies. In the digital age, the government can enhance transparency by using internet platforms and electronic portals to publish information related to government decisions, budgets, and public projects. This information can include details about general budgets, development plans, government policies, licenses, and government contracts. For example, the government can publish periodic reports on government projects, including the challenges they face and proposed solutions, which contributes to making the government process clearer to citizens[3].

Transparency contributes to building trust between the government and citizens. Transparency also contributes to reducing corruption, as it is difficult for officials to hide any information from the public under modern digital

[1] Choa Tang and R. Murga Perumal, The Characteristics and Values of E - Governance and The Role of E - Democracy, International Journal of Humanities and Management Science, Vol. 1, Issue 1, 2013, P. 142.

[2] Aman Singh, E- Governance: Moving Towards Digital Governance, Vidya A Journal of Gujarat University, Vol. 2, Issue 1, January- June 2023, PP. 204- 215.

[3] OECD, The OECD Digital Government Policy Framework: Six dimensions of a Digital Government, OECD Public Governance Policy Papers, No, 02, OECD Publishing Paris, 2020.

systems. In addition, transparency opens the way for citizens to participate effectively in political life, as they can access information related to decisions that affect their lives[1].

Transparency is one of the most important principles of digital governance, as it relies on providing accurate and clear information about digital operations within the institution. Transparency enhances trust between public institutions and citizens, and reduces the chances of corruption and mismanagement. Transparency includes[2]:

- **Data availability:** Providing data and information in an open and easily accessible manner to all relevant parties, including employees, citizens, and stakeholders.
- **Performance reports:** Publish periodic reports that illustrate the performance of digital systems and technology projects, focusing on results and challenges.
- **Clarity in decisions:** Ensuring that decisions related to digital transformation are based on clear and understandable data.

1.3.2. Accountability:

The principle of accountability refers to the commitment of government institutions to provide clear and convincing explanations and answers to citizens about the decisions and actions taken. This principle enhances citizens' ability to hold the government accountable for its performance and actions. Digital governance contributes to enhancing accountability by providing electronic platforms that allow citizens to submit complaints and suggestions[3]. For example, citizens can submit complaints about government services online, and then track the status of the complaint until it is resolved. The government can also provide periodic reports on how public policies are implemented and the overall performance of government institutions. In some cases, technologies such as blockchain can be used to ensure transparency and accountability in government operations, as every government process can be tracked from start to finish[4].

By strengthening accountability, government performance can be improved, as officials are assured that they will be subject to continuous review by citizens. Accountability also contributes to strengthening trust between government and citizens, as citizens feel that the government is accountable for its actions. Accountability is also an effective tool for reducing corruption, as it makes it difficult for officials to evade responsibility. Accountability ensures that digital decisions are based on sound foundations, and that performance is continuously improved. It means holding individuals and teams accountable for the results of their work within the framework of digital operations. Accountability includes[5]:

- **Defining roles and responsibilities:** Clearly defining the roles and responsibilities related to managing technology and digital systems within the organization.
- **Monitoring mechanisms:** Establishing control systems that enable performance monitoring and assessing compliance with established standards and policies.

---

[1] Yannis Charalabidis, Leif Flak and Gabriela Pereire, Scientific Foundations of Digital Governance and Transformation Concepts, Approaches and Challenges, Springer Publisher, 2022, P. 102.

[2] Jopang Jopang, Septian Aryatama, Muazzinah Muazzinah and Qamal Qamal, Exploring the Relationship Between E-Government, Transparency, and Citizen Trust in Government Services, Global International Journal of Innovative Research, Vol. 2, Issue. 6, July 2024, PP. 1354- 1363.

[3] Irfan Bora, Huijue Kelly Duan and Miklos A, Vasarhely, Chanyuan Zhang and Jun Dai, The Transformation of Government Accountability and Reporting, Journal of Emerging Technologies in Accounting, Vol. 18, Issue. 2, 2021, PP. 1- 21.

[4] Mohammad Mustafa Ibrahimy, Alex Norta and Peeter Normak, Blockchain-Based Governance Models Supporting Corruption-Transparency: A Systematic Literature Review, Blockchain Research and Applications, Vol. 5, Issue 2, December 2023, PP. 1- 21.

[5] Kelsie Nabben and Primavera De Filippi, Accountability Protocols? On - Chain Dynamics in Blockchain Governance, Internet Policy Review, Journal of Internet Regulation, Vol. 13, Issue. 4, October 2024, PP. 1- 22.

- **Sanctions and rewards:** Implementing a system of rewards and sanctions based on performance, which encourages adherence to established standards.

1.3.3. Efficiency:

In digital governance, efficiency means using available resources effectively to achieve specific goals while minimizing waste of time and money. Efficiency aims to improve the quality of government services and reduce costs, which contributes to providing better services to citizens. Efficiency can be achieved in public institutions through the implementation of advanced digital systems such as process automation, the use of artificial intelligence technologies, and big data analysis[1]. For example, the efficiency of government service delivery can be improved by creating digital platforms that enable citizens to complete their transactions faster and more accurately, such as submitting government applications or receiving documents. In addition, digital systems contribute to improving the use of human resources by improving recruitment and training processes, which reduces errors and increases the speed of decision-making.

Achieving efficiency leads to improved government performance and reduced costs. When public institutions use resources effectively, they can provide better and faster services to citizens. For example, when applying for licenses, the time required for these procedures can be reduced by digitizing the entire process, reducing the need for staff and increasing the speed of implementation[2].

1.3.4. Justice and Equality:

Justice and equality are fundamental pillars of digital governance, ensuring equal opportunities for all individuals to access and benefit from government services without discrimination. Achieving digital justice requires ensuring equitable access to technology and digital resources for all segments of society, regardless of their economic, social, or geographic backgrounds. Digital transformation should be a tool for promoting equality among citizens, not a factor that exacerbates existing gaps[3].

Providing a fair digital environment includes designing efficient and transparent e-government services that are accessible to all citizens without exception. To achieve this, public institutions must develop policies that ensure the equitable distribution of digital infrastructure, including high-speed internet, technological devices, and interactive digital platforms. Justice here does not only mean equal access, but also extends to ensuring the equal quality of services provided, ensuring no discrimination in the level of service between urban and rural areas or between different groups[4].

Justice in digital government also requires protecting users' rights by ensuring respect for their privacy and the security of their data. This includes establishing strict regulations that protect individuals from digital exploitation and ensure their data is used in a transparent and responsible manner. When citizens trust that their data is protected, they become more willing to use digital services, which enhances the effectiveness of digital transformation and increases their interaction with the government's digital ecosystem. Achieving equality in digital governance also means removing barriers that may prevent some groups from benefiting from digital services. It is

[1] Vincent J. Straub, Youmna Hashem, Jonathan Bright, Satyam Bhagwanani, Deborah Morgan, John Francis, Saba Esnaashari and Helen Margetts, AI for bureaucratic productivity: Measuring the potential of AI to help automate 143 million UK government transactions, March 2024, PP. 1- 18.

[2] Deloitte, AI: Can smart technologies drive government efficiency?, Available at: https://www.deloitte.com/us/en/Industries/government-public/articles/ai-in-federal-government.html.

[3] Gatot Hery Djatmiko, Obsatar Sinaga and Suharno Pawirosumarto, Digital Transformation and Social Inclusion in Public Services: A Qualitative Analysis of E-Government Adoption for Marginalized Communities in Sustainable Governance, Sustainability, Vol. 17, Issue 7, 2025, PP. 3- 4.

[4] Meena Chary, Social Equity, the Digital Divide and E-Governance: An Analysis of E-Governance Initiatives in India, University of South Florida, USA, 2011, P. 65.

essential that government platforms are easy to use and accessible to everyone, including the elderly and people with disabilities. This can be achieved by designing interactive digital interfaces that rely on assistive technologies such as text-to-speech, or providing options to display content in ways that suit the needs of different users[1].

1.3.5. Innovation and Development:

Innovation and development are essential elements for achieving effective and sustainable digital governance. They contribute to improving the quality of government services, enhancing operational efficiency, and providing smart solutions that meet citizens' changing needs. Innovation in digital governance relies on the use of modern technologies such as artificial intelligence, big data analytics, and the Internet of Things to improve decision-making processes and deliver smoother and more efficient services[2].

Developing digital infrastructure is a priority in this context, as it ensures an advanced environment capable of absorbing and effectively implementing technological innovations. This includes improving communication networks, creating interactive digital platforms, and adopting cloud computing systems that facilitate the exchange of various information, contributing to the provision of interconnected and responsive government services. Innovation in digital governance is not limited to developing technologies, but extends to redesigning administrative policies and procedures in a way that contributes to facilitating operations and improving the user experience. This can be achieved by adopting smart management methods and developing systems that enable citizens to interact with government institutions easily, such as smartphone applications that provide integrated digital government services[3].

Furthermore, investing in human capital is a fundamental pillar of digital governance development, as digital transformation requires qualified personnel capable of managing and continuously developing modern technologies. Therefore, specialized training programs must be provided, and partnerships with universities and research institutions must be strengthened to support innovation and develop technical solutions that meet societal needs. Furthermore, public-private sector collaboration plays a significant role in accelerating digital innovation. Through strategic partnerships, governments can leverage the technical expertise provided by specialized companies, contributing to the development of more efficient and innovative services and enhancing investments in digital infrastructure. Innovation and development are therefore the cornerstone of successful digital governance, enabling the provision of advanced government services, enhancing transparency, and achieving sustainability through adopting an innovation-driven approach. This improves government performance, enhances citizen engagement, and builds an advanced digital society that keeps pace with modern developments[4].

1.3.6. Participation and Cooperation:

Participation plays a fundamental role in strengthening digital democracy, as it allows individuals the opportunity to express their opinions and contribute to the development of public services and policies. Digital governments provide tools such as electronic referendums, suggestion platforms, and virtual dialogues, allowing citizens to interact directly with decision-makers and contribute to improving government performance[5]. Cooperation is a vital element in the success of digital governance, as it relies on the integration of efforts between the public and private

[1] Olga Kolotouchkina, Carmen Llorente Barroso and Juan Luis Manfredi Sanchez, Smart Cities, The Digital Divide and People With Disabilities, Cities, Vol. 123, April 2022, PP. 1- 4.

[2] OECD, Enabling Digital Innovation in Government: The OECD GovTech Policy FrameworK, 2024, PP. 12- 13.

[3] Abdullah M. Al-Ansi, Askar Garad, Mohammed Jaboob and Ahmed Al-Ansi, Elevating E -Government: Unleashing The Power of AI and IoT for Enhanced Public services, Heliyon Journal, Vol. 10, 2024, PP. 10- 11.

[4] Marijn Janssen, Martijn Hartog, Ricardo Matheus, Aaron Yi Ding, George Kuk, Will Algorithms Blind People? The Effect of Explainable AI and Decision-Makers' Experience on AI Supported Decision-Making in Government, Soc. Sci. Comput. Vol. 40, Issue 2, 2022, PP. 478–493.

[5] Anni Jäntti, Henna Paananen, Anna-Aurora Kork and Kaisa Kurkela, Towards Interactive Governance: Embedding Citizen Participation in Local Government, Administration and Society Journal, Vol. 55, Issue 8, June 2023, PP. 1529- 1554.

sectors, academic institutions, and civil society. By building strategic partnerships, innovative digital solutions can be developed that meet the changing needs of society, enhance the efficiency of government services, and provide an integrated technical environment that enables the exchange of knowledge and expertise[1].

In addition, international cooperation in the field of digital governance contributes to the exchange of best practices, the promotion of technological development, and the ensuring that digital systems comply with global standards by engaging in international cooperation networks. Governments can improve their digital policies and benefit from global expertise in the fields of cybersecurity, data management, and artificial intelligence. Therefore, activating participation and cooperation has a positive impact on the digital economy, as it allows startups and entrepreneurs to contribute to the development of government services by providing innovative digital solutions. This approach also enhances a competitive environment that contributes to improving the quality of services and creating new job opportunities in the fields of technology and innovation. In addition, participation and cooperation are two essential pillars of the success of digital governance, as they contribute to enhancing interaction between governments and societies, achieving transparency, and improving the services provided by involving everyone in the digital transformation process[2].

1.3.7. Compliance With Laws and Regulations:

Compliance with laws and regulations is a fundamental principle of digital governance, ensuring that public and private institutions adhere to the legal and regulatory standards governing digital operations. This compliance aims to achieve transparency, enhance trust in digital services, and protect the rights of individuals and institutions, contributing to building a safe and sustainable digital environment. Digital compliance requires adherence to legislation related to the protection of personal data, such as privacy laws that ensure that information is not misused or leaked. Compliance also includes cybersecurity regulations that aim to protect digital systems from cyberattacks and potential breaches, thus maintaining the stability of the digital infrastructure and ensuring the continuity of government services[3].

Furthermore, compliance with laws and regulations includes following international and local standards governing areas such as electronic transactions, digital signatures, and artificial intelligence, to ensure integration and compatibility with global digital systems. This commitment contributes to facilitating international cooperation and enhancing investment opportunities in the digital economy by building a clear and stable legal environment. Compliance also requires digital institutions to adopt strict internal policies to ensure continued compliance with legal systems, such as conducting periodic audits, updating security procedures, and providing ongoing training for employees on new digital laws. This contributes to reducing legal risks and enhancing institutions' ability to adapt to technological and legislative changes[4].

Furthermore, compliance enhances citizens' trust in digital services, as users realize that their data and rights are protected by clear and enforceable laws. It also ensures the provision of fair and reliable digital government services, which enhances individual participation in the digital ecosystem and contributes to a successful digital transformation. Compliance with laws and regulations also ensures the legal sustainability of digital technologies, protects the rights of individuals and institutions, and enhances the reliability of digital systems. Through strict

[1] Liang Ma, Tom Christensen and Yueping Zheng, Government Technological Capacity and Public–Private Partnerships Regarding Digital Service Delivery: Evidence From Chinese Cities, International Review of Administrative Sciences, Vol. 89, Issue. 1, June 2021, P. 5.

[2] Els M. Leclercq and Emiel A. Rijshouwer, Enabling Citizens' Right To The Smart City Through The Co-Creation of Digital Platforms, Urban Transformations, March 2022, PP. 1-19.

[3] Patrick Spencer, Data Governance and Digital Transformation in the Public Sector, Kiteworks, September 2024, Available at: https://www.kiteworks.com/cybersecurity-risk-management/data-governance-in-the-public-sector/.

[4] Leah Sadoian, Guarding Governance: Cybersecurity in the Public Sector, 2025, Available at: https://www.upguard.com/blog/cybersecurity-in-the-public-sector.

adherence to the legal framework, governments can achieve a safe and orderly digital transformation that enhances economic and social development[1].

1.3.8. Security and Data Protection:

Security and data protection refer to the need to protect personal data and sensitive information collected by public institutions, and to ensure that this data is protected from cyber threats and attacks. Digital governance requires that public institutions follow the best standards to ensure data protection. This is achieved by using advanced encryption technologies and modern security systems to protect personal information. Public institutions must also comply with local and international regulations related to data protection, such as the General Data Protection Regulation (GDPR)[2]. In addition, employees must be trained on how to handle sensitive data and develop strict policies to control access to information. Implementing security standards reduces the risks associated with cyber-attacks and data leaks. It also enhances citizens' confidence in the digital system, as they feel their personal information is well protected. Security and data protection also contribute to enhanced compliance with local and international privacy laws[3].

Cybersecurity is a fundamental pillar of digital governance, aiming to protect data and digital systems from cyber threats. It also ensures business continuity and protects an organization's reputation from damage resulting from cyberattacks. Cybersecurity principles include implementing strict measures to protect personal and sensitive data from breaches or leaks, identifying potential cyber risks and developing proactive plans to address them, and providing employee training programs to raise their awareness of the importance of cybersecurity and how to deal with threats[4].

1.3.9. Sustainability:

Sustainability in digital government means ensuring the long-term sustainability of digital improvements, including the sustainability of technology, financial resources, and human resources. Sustainability is achieved by adopting long-term strategies for developing digital technology in public institutions. This includes ensuring that digital systems are scalable and keep pace with future technological developments. Digital infrastructure must also be sustained through regular hardware and software updates[5]. Additionally, employees must be continuously trained in the use of these technologies to ensure continued efficiency in delivering digital services. Sustainability ensures the continuity of digital improvements in the future, making government services more effective in the long term. Adopting sustainable digital solutions also helps reduce the environmental impact by reducing the need for paper and other physical resources[6].

Sustainability, as a fundamental principle of digital governance in public institutions, ensures that digital operations are effective and aligned with environmental and social objectives through the efficient use of technological resources. Sustainability principles include rationalizing consumption, using energy and technological resources

[1] Sarah Lee, Digital Governance Essentials: Navigating Ethics in Public Administration for a Digital Age, May 2025, Available at: https://www.numberanalytics.com/blog/digital-governance-essentials.

[2] Dawit Negussie, Importance of Cybersecurity Awareness Training for Employees in Business, Peer Reviewed, Multidisciplinary & Multilingual Journal, Vol. 2, Issue 2, July- December 2023, PP. 104- 107.

[3] S. Al Fadhli, Challenges of Digital Transformation in Libyan Education. International Journal of Education and Information Technologies, 2021, P. 61.

[4] C. V. Govindraj, Digital Governance and Cybersecurity: Challenges in the age of E- Governance, Journal of Visual and Performing Arts, Vol. 5, Issue. 1, January 2024, PP. 4328- 4332.

[5] Noella Edelmann and Shefali Virkar, The Impact of Sustainability on Co-Creation of Digital Public Services, Administrative Sciences, Vol. 13, Issue 1, 2023, PP. 13- 14.

[6] Mohammed Ibrahim Gariba, Emmanuel Ebo Arthur and Samuel Amponsah Odei, Assessing the impact of public digitalization on sustainability: the mediating role of technological innovation in the context of the EU, Discover Sustainability, 2024, PP. 5-6.

effectively to reduce waste, developing long-term strategic plans to ensure the continuity of digital operations, and reducing the environmental impact of digital operations through the use of environmentally friendly technologies[1].

2. Digital technical failures:

2.1. Definition of Digital Technical Failures:

Digital technical failures are defined as a failure in information technology systems that causes the system to be inconsistent with the planned reality or unable to perform its intended functions. These failures are the result of gaps between design and reality, poor project management, or the lack of an appropriate technical environment[2]. These failures result in systems being shut down or partially or completely destroyed. Digital technical failures can be classified as[3]:

- **Development defects:** Human errors in design or coding.
- **Material defects:** Equipment malfunctions.
- **Interaction defects:** Problems connecting components or interfaces.
- **Natural defects:** Such as natural disasters.

2.2. Causes of digital technical failures:

There are several reasons for digital technical failures, including:

2.2.1. Inadequate System Requirements Engineering:

Requirements engineering is the process of discovering, documenting, and analyzing the services that a particular system will provide. This process involves systematic research and study of systems, processes, materials, operating environments, user needs, and other elements and materials to determine the needs of the new system[4]. Inadequate system requirements specifications cause 50% of the failures of e-government information systems projects in developing countries. For example, the student information system implemented by the Uganda Management Institute (UMI) failed because it omitted vital features in the finance module. The analyst did not include the requirements for these features in the initial requirements specification document[5].

2.2.2. Inadequate Project Management:

Project management is the application of knowledge, skills, tools and techniques to direct project activities in line with its goals and objectives. Many e-government information systems projects fail due to poor project management. An example of this is the failure of the Electronic National Traffic Information System (E-NaTIS) in South Africa, according to the African Journal of Information and Communication (AJIC), mainly due to poor

[1] Apurva Goel, Snehal Masukar and Girish R. Pathade, An Overview of Digital Transformation and Environmental Sustainability: Threats, Opportunities and Solutions, Sustainability Journals, Vol. 16, Issue 24, PP. 7-8.

[2] Leonidas Anthopoulos, Christopher G. Reddick, Irene Giannakidou and Nikolaos Mavridis, Why e-government projects fail? An analysis of the Healthcare.gov website, Government Information Quarterly Journal, Vol. 33, Issue 1, January 2016, P. 165.

[3] Baseer Ahmad Baheer, David Lamas and Sónia Sousa, A Systematic Literature Review on Existing Digital Government Architectures: State-of-the-Art, Challenges, and Prospects, Administration Sciences Journal, 2020, P. 1.

[4] S. Ullah, M. Iqbal and A. M. Khan, A Survey on Issues in Non - Functional Requirements Elicitation. In Proceedings of International Conference on Computer Networks andInformation Technology, Islamabad, 11- 13 July 2011, PP. 333- 340.

[5] Rehema Baguma and Jude Lubega, Factors for success and failure of e-government projects. In ICEGOV'13: Proceedings of the 7th International Conference on Theory and Practice of Electronic Governance, 2013, PP. 194- 197.

project management[1]. Therefore, e-government projects must adopt proven management methodologies, align their objectives with the strategic goals of the organization, and employ their competence to manage them[2].

2.2.3. Missing or Incomplete Features:

An IS project is said to be successful if it is delivered on time and within the specified budget and with the required quality, features, and ease of use that reflect the real needs of the clients or users[3]. In some cases, e-government IS projects are delivered and accepted with vital missing or incomplete features, thus failing to work and achieve the expected results[4]. This practice leads to the total or partial failure of the e-government IS project. For example, the "Gorilla Buddy" project in Uganda, which was implemented to raise awareness and funds to promote gorilla conservation, was implemented without the essential features of selling promotional materials online and befriending gorillas via SMS[5]. Many reasons can lead to the delivery of incomplete projects, including government officials' resignation due to corruption and failure to follow proper procedures[6].

2.2.4. Inadequate Project Planning:

A project plan identifies activities, timelines, resources, risks, constraints, expected deliverables, and baseline information against which the project can be implemented, monitored, and evaluated[7]. Many of the challenges faced by e-government projects can be avoided or mitigated if carefully planned[8]. The e-Revenue Licensing Project in Sri Lanka is considered a successful e-government initiative due to its good planning[9].

2.2.5. Inappropriate Technology Selection:

When selecting technology for a particular project, several factors must be considered, including ease of learning and use, fitness for purpose, ease of integration with existing systems, availability of documentation and support, availability of skills, overall implementation costs, and overall perceived quality and usefulness[10]. Factors such as corruption may influence technology selection, leading to what are commonly known as vendor-led projects. The smart card project in Thailand is an example of the use of inappropriate technology in an e-government initiative[11].

2.2.6. Insufficient Senior Management Support:

[1] Mustafa Afyonluoğlu, Atilla Aydin Sare Gul Sevil, Eda Yüksel and Murat K. Güngör, An E-Government Project Management Approach with E- Transformation Perspective, International Journal of E Business and E Government Studies, Vol. 6, Issue 1, 2014, PP. 21- 33.

[2] Jayantha Rajapakse, Abraham Gert Van der Vyver and Erin Hommes, E- Government Implementations in Developing Countries: Success and Failure, Two Case Studies, IEEE International Conference on Information and Automation for Sustainability, 27- 29 September 2012, PP. 95- 100.

[3] Ramlah Hussein, Nor Shahriza Abdul Karim and Mohd Hasan Selamat, The Impact of Technological Factors on Information Systems Success in The Electronic Government Context, Business Process Management Journal, Vol. 13, Issue 5, September 2007, PP. 613- 627.

[4] Isaac Sakyi Damoah and Cynthia Akwei, Government Project Failure in Ghana: A Multidimensional Approach, International Journal of Managing Projects in Business, Vol. 10, Issue 1, 2017, PP. 32- 59.

[5] Baguma and Lubega, Op, Cit, PP. 194- 197.

[6] Damoah and Akwei, Op, Cit, PP. 32- 59.

[7] Pierre Bakunzibake, Ake Grönlund and Gunnar O. Klein, E- Government Implementation in Developing Countries: Enterprise Content Management in Rwanda, Electronic Government and Electronic Participation, February 2018, PP. 251- 259.

[8] Amirhossein Ghapanchi, Zarei Behrouz and Amir Albadvi, Framework for E - Government Planning and Implementation, Electronic Government An International Journal, Vol. 5, Issue 1, January 2008, PP. 71- 90.

[9] Rajapakse, Op, Cit, PP. 95- 100.

[10] Hussein et al, Op, Cit, PP. 613- 627.

[11] Damoah and Akwei, Op, Cit, PP. 32- 59.

Senior managers are expected to closely monitor critical aspects of the project, including ensuring that the project's goals, objectives, vision, and values reflect the organization's values. Senior managers must ensure that the project is managed according to the organization's standards, and that resources are provided in a timely manner. They must also ensure that project risks are adequately identified and mitigated. A systematic project review will ensure that key milestones are completed on time and that project resources are utilized optimally. Finally, senior managers must promote the project to internal and external stakeholders[1].

2.2.7. Integration Failure:

Providing e-government services requires vertical and horizontal integration of e-government systems[2]. Given the difficulty of achieving this, the challenges of e-government integration are classified into four main categories: strategy, technology, policy, and organization[3]. Most government institutions and agencies develop their e-government systems independently of each other, without paying much attention to how other government institutions and agencies interact with them[4]. For example, the integration between the Citizen Assistance Request (CHR) system, designed by the Bangladesh Police to facilitate online incident reporting, and the identification system to verify the identity of applicants failed due to technical and organizational issues. As a result, the police continued to receive applications with fake names and contact addresses[5].

2.2.8. Disadvantages of Procurement and Contracts:

Government agencies outsource most e-government information systems projects to third parties through legally binding contracts[6]. In some cases, they use various forms of public-private partnerships. In both cases, a contract is essential that defines the parties involved, their obligations, the consequences of non-fulfillment, and dispute resolution procedures. The lack of a fair contract can lead to legal problems, which may ultimately lead to the failure of the project[7].

2.2.9. Inadequate Business Process Management (BPM):

Business Process Management (BPM) is an organizational strategy for identifying, modeling, analyzing, measuring, automating, optimizing, and continuously improving core activities in an organization[8]. The overall goal of e-government initiatives is to improve public service delivery and enhance management processes through electronic services. In this case, BPM and e-government are two complementary initiatives that should go hand in hand. Unfortunately, most e-government information systems projects are designed without including BPM as a core

[1] Shashank Ojha and I. M. Pandey, Management and Financing of E - Government Projects in India: Does Financing Strategy Add Value?, IIMB Management Review, Vol. 29, Issue 2, 2017, PP. 1- 19.

[2] Karen Layne and Jungwoo Lee, Developing Fully Functional E - Government: A Four Stage Model, Government Information Quarterly, Vol. 18, Issue 2, PP. 122- 136.

[3] Wing Lam, Barriers to e-government integration, Journal of Enterprise Information Management, Vol. 18, Issue 5, 2005, PP. 511- 530.

[4] Zuhoor Abdullah Al-Khanjar, Nasser Al-Hosni and Naoufel Kraiem, Developing A Service Oriented E - Government Architecture Towards Achieving E - Government Interoperability, International Journal of Software Engineering and Its Applications, Vol. 8, Issue 5, 2014, PP. 29- 42.

[5] Mohammad Mahmudul Hasan, E- Government Success and Failure: A Case Study of Bangladesh Police, Daffodil International University Journal of Science and Technology, Vol. 10, Issue 1, 2015, PP. 61- 67.

[6] Ojha and Pandey, Op, Cit, PP. 1- 19.

[7] Afyonluoğlu et al, Op, Cit, PP. 21- 33.

[8] Peter Trkman, The Critical Success Factors of Business Process Management, International Journal of Information Management, Vol. 30, Issue 2, 2010, PP. 125- 134.

component. Implementing an e-government information system without reengineering processes can lead to undesirable results and ultimately project failure[1].

2.2.10. Inadequate IS Testing:

Information systems testing is a critical phase in the system development life cycle[2]. It aims to verify, validate, detect, and fix system errors. During the verification process, the developed system is examined to assess its compliance with specified requirements. Inadequate system testing results in its inability to meet the expectations and needs of stakeholders, leading to its abandonment[3].

2.2.11. Inadequate Change Management:

E-government projects are transformational projects that tend to alter business processes, service delivery mechanisms, and organizational structure[4]. Successful transformation requires an appropriate change management process. Some e-government projects fail because the organization is unable to make the necessary institutional changes to transition from legacy processes to the new processes enabled by advanced e-government information systems. A practical change management framework must address all aspects of the organization's implementation, including technology, management, operations, legislation, personnel, and organization[5].

2.2.12. Staff and Skills Shortages:

An effective e-government implementation team must possess core skills, including strategic IT skills, information society skills, information management skills, technical skills, project management skills, and communication skills[6]. Most governments in developing countries suffer from a severe shortage of skilled personnel, and the lack of of relevant technical skills within the e-government project team negatively impacts the quality of information systems[7].

2.2.13. Excessive Technical Complexity:

Technical complexity refers to the difficulty of solving a particular problem using the relevant technology[8]. This includes the inability to accurately define information and processing requirements, data communications, and overall system design, setup, and configurations. Lack of thorough technical evaluation is a major cause of complexities and technical problems in e-government information systems projects. Learning from the mistakes of previous projects is critical to reducing risks and failures in new projects[9].

---

[1] Rodrigo L. Martin and Jorge M. Montagna, Business Process Reengineering Role in Electronic Government, The Past and Future of Information Systems: 1976–2006 and Beyond, Conference Paper, 21-23 Augst 2006, PP. 77- 88.

[2] Tomi Rajala and Hannes Aaltonen, Reasons for The Failure of Information Technology Projects in the Public Sector, In Book: The Palgrave handbook of the public servant, Palgrave MacMillan, May 2020, PP. 1- 21.

[3] Sarika Chaudhary, Latest Software Testing Tools and Techniques: A Review, International Journal of Advanced Research in Computer Science and Software Engineering, Vol. 7, Issue 5, 2017, PP. 538- 540.

[4] Afyonluoğlu et al, Op, Cit, PP. 21- 33.

[5] Janja Nograsek, Change Management as a Critical Success Factor in E - Government Implementation, Business Systems Research Journal, Vol. 2, Issue 2, September 2012, PP. 13- 24.

[6] M. Al Slami, S. Mohtar and N. Hasnan, Skills and Factors of E - Government: Case Study of Sultanate of Oman, International International Journal of Innovation, Management and Technology, Vol. 8, Issue 4, PP. 313- 319.

[7] Ghapanchi et al, Op, Cit, PP. 71- 90.

[8] Alexei Botchkarev and Patrick Finnigan, Complexity in The Context of Information Systems Project Management, Organizational Project Management, Vol. 2, Issue 1, 2015, PP. 15- 34.

[9] Indranil Mukherjee, Understanding Information System Failures from The Complexity Perspective, Journal of Social Sciences, Vol. 4, Issue 4, 2008, PP. 308- 319.

2.2.14. Outdated Technology:

Planning and implementing government systems projects takes a relatively long time, and as a result, some e-government projects are implemented while the associated technologies are obsolete or on the verge of becoming obsolete. Developing countries also suffer from the adoption of outdated technologies when developed countries donate technological equipment and systems[1].

2.2.15. Information Gaps:

A mismatch between what is captured or produced by the system and what is requested by system users can lead to the failure of an e-government information system. Information gaps in an e-government information system occur in three situations: capturing information that is not necessary for processing or reporting; failing to capture essential information needed for processing or reporting; and requesting certain information that may not be available or relevant to certain users or scenarios[2]. For example, the Citizen Assistance Request (CHR) system designed by the Bangladesh Police required a valid signature from the requester to initiate an investigation. However, the inability of citizens to provide digital signatures online rendered the system unusable[3].

2.2.16. Inadequate Infrastructure:

E-government infrastructure includes hardware platforms, software platforms, middleware, data communications equipment, networks, backup devices, disaster recovery devices, and security technologies. These devices and equipment enable the provision of e-government services that are easily accessible to users. In the field of information technology, the performance and effectiveness of infrastructure are measured in terms of reliability, which is its ability to ensure continuity of operation; scalability, which is its ability to accommodate increased loads; and flexibility, which is its ability to accommodate changes that may be required[4].

2.2.17. Political interference:

Governments are run by politicians who influence many aspects of decision-making, leadership, and development initiatives. Politicians influence many government projects, both positively and negatively, through various means, such as appointing project managers, manipulating their scope and outcomes to suit their political interests, and making different decisions[5]. When a digital project is imposed for political purposes or without adequate technical preparation, this leads to unjustified acceleration of the project stages, leading to the project's failure[6].

2.2.18. Inappropriate Organizational Structure:

Government institutions are built to support their core missions. They rely on a hierarchical structure with bureaucratic leadership, close relationships, and strict rules and procedures. The organizational structure is a fundamental element of e-government governance. Poor allocation of responsibilities or lack of coordination among project stakeholders leads to conflicting decisions and delays in resolution. Therefore, institutions

[1] Jens Goedeke, Mario Mueller and Oleg Pankratz, Uncovering the Causes of Information System Project Failure, In AMCIS 2017 proceedings, 2017, PP. 1- 10.

[2] Vivek Vyas, Shivani Vyas and Amit Kundan, Management Information System: Information Needs of organization, International Journal of Information and Computation Technology, Vol. 4, Issue 17, January 2014, PP. 1903- 1908.

[3] Hasan, Op, Cit, PP. 61- 67.

[4] Deepak Dahiya and Saji Mathew, IT Infrastructure Capability and E - Government System Performance: An Empirical Study, Transforming Government People Process and Policy, Vol. 12, Issue 2, January 2018, PP. 16- 38.

[5] Rajala and Aaltonen, Op, Cit, PP. 1- 21.

[6] Asad Abbas, Ali Faiz, Anam Fatima and Ander Avdic, Reasons for The Failure of Government IT Projects in Pakistan: A contemporary Study, International Conference on Service Systems and Service Management, 16- 18 June 2017, PP. 1-6.

implementing e-government initiatives must make the necessary reforms to accommodate and manage changes in the e-government system[1].

2.2.19. Security Reasons:

which are represented by the management's failure to protect data from internal and external manipulation and fraud, in addition to cybersecurity risks, security breaches, and unauthorized access[2].

3. Foundations of Administrative Responsibility For Digital Technical Malfunctions:

An important development meant to improve efficiency and service delivery is the use of electronic public administration in the management of public facilities. However, there are dangers associated with this shift that could negatively impact beneficiaries, hence a legal framework for state culpability is required. Three main areas are examined in this analysis of the foundation of administrative responsibility in the context of electronic public facilities: strict liability (without error), liability based on proved error, and liability based on presumed error.

3.1. Verified Error:

Verified Conventional administrative liability is predicated on the existence of fault, which is usually demonstrated by an error. This idea applies to circumstances in the field of electronic public administration where the administration's actions—like system failures or data breaches—directly arise from observable errors. For example, the administration may be responsible for damages if a coding error causes a public facility's digital system to process personal data incorrectly, causing harm. This is consistent with the idea that the state bears responsibility for any illegal or irregular official conduct carried out while performing its obligations.

French administrative law provides a seminal illustration of this type of fault-based liability, since the Conseil d'État has repeatedly maintained that a public organization is accountable for "faute de service," or a service error, if a public system malfunctions and harms people[3].

This kind of accountability serves as a legal incentive for public entities to responsibly maintain and improve their information systems in addition to being necessary for redress[4]. Furthermore, under frameworks like the EU General Data Protection Regulation (GDPR), proved mistakes in the management of personal data may potentially result in administrative punishment and civil compensation[5]. Administrative liability for digital mismanagement, therefore, is a contemporary extension of long-standing public law principles under the notion of demonstrated fault, guaranteeing that technology advancement does not evade established norms of accountability.

It is essential to realize that, despite having legal identity, the administration lacks a will separate from its agents. Since public officials are the means by which the administration functions, mistakes made in the performance of

[1] Rogers Matte, Bureaucratic Structures and Organizational Performance: A comparative Study of Kampala Capital City Authority and National Planning Authority, Journal of Public Administration and Policy Research, Vol. 9, Issue 1, PP. 1- 16.

[2] Nonye Aniefiok Asikpo, Impact of Digital Transformation on Financial Reporting in the 21st Century. International Journal of Comparative Studies and Smart Education, Vol. 1, Issue 1, 2024, PP. 34- 45.

[3] Conseil d'État, Dame Veuve Muësser, CE, France, 20 November 1946, Rec. Lebon, 252.

[4] David H. Rosenbloom, Public Administration: Understanding Management, Politics, and Law in the Public Sector, 9th ed, McGraw-Hill Education, New York, 2022, PP. 284–285

[5] Paul De Hert and Vagelis Papakonstantinou, The New General Data Protection Regulation: Still a Sound System for the Protection of Individuals?, Computer Law & Security Review, Vol. 32, Issue. 2, 2023, PP. 179–194.

administrative duties are thereby committed by them[1]. Due to this issue, the French Conseil d'État created a crucial legal theory that distinguishes between service fault (faute de service) and personal fault (faute personnelle)[2].

3.1.1. Personal Fault Versus Service Fault:

In civil responsibility, the individual is usually held directly responsible for the fault. But according to administrative law, personal culpability describes actions taken by a public servant that are completely unrelated to their administrative role, such as behavior resulting from personal hostility, willful misbehavior, or actions taken outside the parameters of their job. In these situations, the individual bears responsibility, and the regular civil courts have jurisdiction[3]. On the other hand, even if the act was careless or damaging, misconduct that occurs while carrying out official tasks is considered a service fault. The administrative courts have the authority to consider such claims, and the administration is accountable for these actions. This distinction represents the understanding that although the administration should be held responsible for the actions of its agents, it should not be held liable for actions that are unrelated to public service or that gravely breach the position's duties.

The French administrative courts' jurisprudence, especially the Conseil d'État's rulings, has been a significant source of advice in this area. In the 1911 landmark decision Anguet CE, for example, the court recognized the potential for both forms of guilt to coexist and upheld the administration's liability even in cases where personal fault occurred, provided that the conduct was not completely separated from service. This dual culpability approach, which is becoming more widely recognized in different legal systems throughout the world, makes sure that victims are not left without compensation because of the difficulty of fault classification[4]. In conclusion, the contemporary theory of administrative accountability strikes a compromise between defending the rights of individuals injured by official activities and the protection of the public interest. Administrative law strengthens the rule of law in public administration by achieving both functional responsibility and justice in the distribution of culpability by differentiating between personal and service failures.

Though the distinction between faute personnelle (personal error) and faute de service (service fault) has long been acknowledged by the French administrative justice, it is still theoretically and practically challenging to distinguish between the two. The concept mostly depends on an abstract criterion that is hard to consistently apply in practical settings, despite the fact that its goal is to fairly divide blame between the administration and the public employee. The idea of fault, whether it be personal or service-related, is fundamentally human behavior, and its assessment is subject to a number of overlapping subjective and objective criteria. The difficulty stems from the fact that administrative errors are rarely the consequence of isolated incidents, but rather are frequently the consequence of intricate relationships between the psychological makeup of the employee, the institutional demands of the administrative setting, and more general social and cultural factors[5].

According to academics, a public employee's psychological composition may affect how they behave under pressure, in positions of authority, or within an institutional hierarchy, which can make it difficult to distinguish between an act that is completely personal and one that is ingrained in the workplace[6]. Furthermore, the employment environment—such as workload, administrative restrictions, or ambiguous procedural guidelines—may influence workers to make judgments that are debatably service-related even though they are faulty[7]. The justice and consistency of imposing personal accountability on an official whose actions, although possibly abnormal, were

[1] Peter Cane, Administrative Law, 6th ed, Oxford University Press, Oxford, 2021, P. 197.

[2] Louis Rolland and Pierre Jèze, Traité de droit administratif, 13th ed, Dalloz, Paris, 2022, P. 144.

[3] Georges Vedel and Pierre Delvolvé, Droit administratif, 12th ed, Presses Universitaires de France, Paris, 2021, PP. 312–314.

[4] Suzanne Tavares da Silva, Evolving Doctrines of State Responsibility: From Fault to Functionality, International Review of Administrative Law, Vol. 49, Issue. 2, 2023, PP. 205–228.

[5] Cane, Op, Cit, P. 192.

[6] Rolland and Jèze, Op, Cit, P. 151.

[7] Vedel and Delvolvé, Op, Cit, P. 329.

caused or made worse by systemic flaws are fundamentally called into question by this interaction. The French Conseil d'État's jurisprudence reflects this issue, as the courts have had trouble providing a clear and broadly applicable standard. In certain situations, judges focus on the employee's deliberate actions or the seriousness of their behavior; in other situations, they evaluate whether the act was naturally connected to the discharge of public obligations. This contradiction highlights a conflict between the legal reality that fault is frequently difficult to classify and the doctrinal aim to preserve a distinction for the purposes of assigning liability.

Though analytically helpful, this distinction should not exclude flexible judicial interpretation, according to modern administrative theory, particularly in cases where strict categorization could impede access to justice or equitable recompense[1]. Comparative jurisprudence, which includes developments in Germany and some common law systems, does, in fact, represent a trend toward emphasizing institutional accountability over personal blame, which lessens the severe effects of unduly strict fault distinctions[2].

Nonetheless, when a public official makes a mistake, courts must determine whether the error is personal, resulting from the employee alone, or a service error, for which the administration is accountable[3]. This distinction was established by the French Tribunal des conflits in the Pelletier case of 1873. The court determined that while a personal error made outside the purview of public duties makes the individual employee personally liable, a service error made while performing official duties entails the administration's liability[4]. However, this distinction's application is quite complicated. Being human, error is impacted by a variety of internal and external factors, including one's sociocultural background, work environment, and psychological makeup[5]. Because of this, developing a single standard to differentiate between the two kinds of error is challenging. As a result, the judge considers the particular facts, the circumstances, and the motivations behind the act before making a decision. A number of guiding standards have been proposed by courts and academics to help with this judicial evaluation:

- Misconduct in the official's private time is an example of a personal blunder that is obviously distinct from the job, both psychologically and physically.
- If an error is physically separated from official tasks, such as utilizing government equipment for personal wrongdoing, it is still regarded as personal even if it is mentally related to the job[6].
- If an error is physically separated from official tasks, such as utilizing government equipment for personal wrongdoing, it is still regarded as personal even if it is mentally related to the job[7]. In these situations, courts frequently examine the official's intentions or the gravity of the behavior[8].

Judicial practice has not established a single, abstract legal norm in spite of these conceptual parameters, and each case still depends on the factual matrix and judicial interpretation[9]. The practical fact that the distinction between personal and service fault is hazy and situation-specific is highlighted by this. Therefore, it is possible for a personal error to occur in an electronic public facility if an employee hacks into the site's security system on purpose or with extreme carelessness, causing the site to become completely paralyzed and its services to be suspended until repairs are made. Alternatively, the employee may disclose the confidentiality of personal information or tamper

[1] Suzanne Tavares da Silva, Fault or Function? Rethinking Administrative Responsibility in Modern Governance, International Review of Administrative Law, Vol. 50, Issue. 1, 2024, PP. 114–129.

[2] Giacinto della Cananea, Beyond the State: Public Liability in the European Union, European Public Law, Vol. 29, Issue. 2, 2023, PP. 187–205.

[3] Cane, Op, Cit, P. 198.

[4] Tribunal des conflits, Arrêt Pelletier, 30 July 1873, Rec, P. 546.

[5] Vedel and Delvolvé, Op, Cit, P. 312.

[6] Jean Waline, Droit administratif, 25th ed, LGDJ, Paris, 2023, P. 512.

[7] Vedel and Delvolvé, Op, Cit, P. 313.

[8] Cane, Op, Cit, P. 199.

[9] Rolland and Jèze, Op, Cit, P. 149.

with it by destroying or altering it, which would also be considered a crime known as illegal access to the automated data processing system.

However, according to the French State Council's approach of combining personal error and facility error, such personal errors do not prevent the administration's responsibility alongside the employee's responsibility by discovering the facility error in the simple failure to supervise the employee and take the necessary measures to prevent the occurrence of damage, or by the employee committing these personal errors while using the facility's means and tools. However, an electronic public facility may be held accountable for what is legally defined as a service error—an error that can be attributed to the management rather than a specific employee. This makes the administration liable under public law and requires it to use public funds to compensate the harmed party. The administrative judiciary, which has established specific criteria for detecting service faults, especially in the context of digitalized public services, has jurisdiction over such instances[1]. The legal doctrine acknowledges a variety of service error types, which are frequently categorized into three primary groups. According to the principles of administrative law of French provenance, each of these groups may carry particular liability implications, and this is becoming more prevalent in comparative public law systems:

- Failing to provide the Required Service:

This type of situation arises when the government does not offer a service that it is required by law to give. One example of such a failure in the context of electronic administration would be the inability to access an online government platform, the unresponsiveness of digital communication systems, or the lack of real-time access to public records that citizens are entitled to get[2]. The administration may be held liable under the laws governing public service liability if this failure harms a person or institution and is the consequence of carelessness, defects in the system's design, or inadequate technical maintenance. In these situations, the administration's systemic failure—which is manifested in its software planning, digital infrastructure, or incapacity to guarantee service continuity—causes the harm rather than a single human actor. This type of culpability is consistent with the more general concepts of objective fault in public administration, particularly in cases where the service is required and the user is harmed as a direct result of inaction. This type of issue highlights how public bodies are increasingly responsible for maintaining technological dependability and guaranteeing continuous access to e- government services, especially in cases when digital platforms take the role of more conventional, physical routes.

This type of administrative error can also occur when the administration declines to carry out a task that it is contractually or legally obligated to complete. In these situations, the administration's omission or abstention that causes harm to people establishes culpability rather than a positive conduct[3]. When an administration is legally required to take action but instead takes a passive or unjustifiable stance, this bad behavior is considered a service error under traditional administrative law. The courts have generally found that, where damage and a causal connection can be proven, failing to take action when it is due constitutes a breach of administrative duty and results in responsibility.

This type of liability is becoming more and more significant in the setting of computerized public administration. It could be demonstrated, for example, by a public servant not processing or transmitting a digital transaction after it has been completed, or by failing to receive a request that has been submitted electronically. In addition to modernizing public engagement, the automation and digitization of public services also entails legal requirements to preserve technological functionality and responsiveness. In the digital sphere, a refusal or failure to act might have the same legal repercussions as an express denial of service under traditional administration, especially when computers are supposed to operate independently or with little assistance from humans[4]. Therefore, the same

[1] Waline, Op, Cit, P. 523.

[2] Cane, Op, Cit, P. 207.

[3] Waline, Op, Cit, P. 524.

[4] Rolland and Jèze, Op, Cit, P. 143.

standards that apply to omissions in traditional administration must also be applied to electronic inaction, such as disregarded submissions, technical dead ends, or unanswered service requests. Therefore, if such inaction causes harm to a citizen and the other components of culpability (damage and causal linkage) are met, the state or administrative authority may be held accountable.

- Poor Public Service Performance:

This type of administrative error refers to situations in which the administrative body's performance of its responsibilities is subpar and causes harm to people. Poor service delivery or a lack of organization inside the facility may be the cause of these shortcomings. For instance, poor ventilation in offices, particularly when coal-burning devices are used for heating, can cause health problems for workers. Poor performance in the field of electronic public administration can take many different forms, but they all indicate a violation of the administration's duty of care to consumers of public digital services. In this case, the electronic public facility is accountable for the inability to maintain or arrange digital infrastructure, such as a poorly designed service platform with insufficient access points or complete functionality. A state or public organization may be held liable for misadministration if it offers few digital options that do not cover necessary services or does so in a way that is hazardous, unclear, or inaccessible[1].

Furthermore, systematic service faults may result from a lack of technical control, such as the failure to hire platform administrators, cyber security experts, or IT supervisors. These mistakes could put users at danger for things like account hacking, data breaches, or losing personal information, all of which the administration is required by law to avoid[2].

Administrative law philosophy and jurisprudence uphold the notion that the administration has accountability for systemic or organizational flaws that result in harm in addition to its deliberate or careless actions. Actionable faults under public service liability may include, in particular, poor application of electronic security standards, unclear platform instructions, poor management that permits unwanted access, or recurring technical errors.

In the digital age, where disruptions and instability can impact large segments of the population at once, such failures erode the idea of continuity and regularity of public services, which is essential to administrative law. As a result, inadequate electronic service delivery could lead to administrative compensation claims based on a facility's known or assumed liability. One prominent legal example is when administration platforms have shoddy authentication procedures that permit unwanted access or fail to adequately warn users about possible data dangers. In certain situations, the public administration could be held accountable for carelessness or poor management, particularly if these mistakes cause direct injury to people. Poor performance in electronic public administration is further exemplified by operational flaws, such as failing to implement security protocols, failing to provide electronic warnings about information security risks, providing unclear instructions that allow unauthorized access, or carrying out incorrect operations that negatively impact service recipients. Legal precedents highlight the state's responsibility for these shortcomings. For example, the Supreme Court ruled in Lucknow Development Authority v. M.K. Gupta that the state must reimburse the harmed party from public funds when public employees behave in a way that is unfair to them. Both conventional and electronic methods of providing public services are covered by this principle.

- Slowness or Delay of the Public Facility:

If the administration takes longer than the reasonable amount of time required by the nature of the work to complete its tasks, this is regarded as a public service error, and the administrative body is responsible if the person is harmed as a result. It is important to remember that if the law specifies a day on which the administrative body

[1] Ibid, P. 145.

[2] Cane, Op, Cit, P. 211.

must provide its services and the body does not operate on that date, it is a sign that the administrative body has chosen not to provide its services. This indicates that although the law did not place a deadline on the administration, it did prohibit it from operating too slowly, which could have harmed people and necessitated compensation. This indicates that although the law did not place a deadline on the administration, it did prohibit it from operating too slowly, which could have harmed people and necessitated compensation.

3.2. Assumed Error:

In some cases, liability may develop based on presumed error even in the absence of a proved fault. Liability in administrative law does not always necessitate explicit evidence of fault. Faute présumée, or presumed error, is a threshold that falls in between severe liability and proven fault. In technically complicated domains like electronic public administration, where culpability and causation may be hard to establish, it enables courts to presume negligence when an administrative act causes injury. For instance, the state may be held accountable without specific evidence of negligence if a recently implemented government software system causes widespread service disruptions, such as preventing access to unemployment benefits or public health services, on the grounds that such a breakdown would not typically occur without some sort of mismanagement[1]. The administration must next demonstrate that it took all required safety measures and that circumstances outside of its control caused the harm in order to disprove this assumption[2]. This legal concept is especially pertinent in e-governance settings, where it can be challenging to pinpoint fault due to algorithmic opacity and system complexity. As a result, presumed error turns into a safeguarding legal mechanism that makes sure people aren't left without compensation only because technical evidence isn't available or is hidden by proprietary technology.

Presumptive fault has long been acknowledged by the French Conseil d'État in public liability issues involving administrative services or faulty infrastructure, and it is applied when the administration neglects to maintain crucial public systems[3]. Several legal systems have modified this theory to meet the dangers of digitization, particularly with regard to the processing of public data and the automation of service delivery[4]. In this sense, the presumption of fault is consistent with both new international governance norms, such those established by the OECD, which highlight the precautionary obligation of public administrations running digital infrastructure, and constitutional notions of administrative responsibility[5]. In electronic public administration, where technological complexity might result in unanticipated problems, this strategy is especially pertinent. For instance, even in the absence of concrete proof of fault, the administration may be assumed to have behaved negligently if a public institution implements a new software system that unintentionally results in extensive service interruptions. In addition to protecting beneficiaries, this presumption guarantees that the administration upholds strict care standards in its digital activities.

This theory permits, under some circumstances, the assigning of blame to public authorities in the context of electronic public utilities, even in the lack of concrete proof of misconduct. This strategy seeks to recompense victims and guarantee accountability, but it also presents serious practical and legal issues. The theory of supposed error, for instance, was created by the Conseil d'État, France's highest administrative court, to handle situations in which the damage is exceptional, hard to explain scientifically, and out of proportion to the anticipated result[6].

[1] Cane, Op, Cit, P. 178.

[2] Waline, Op, Cit, P. 512.

[3] Conseil d'État, Commune de Saint-Priest-la-Plaine, France, CE, 21 June 1946, Rec. Lebon 163.

[4] Tavares da Silva, Suzana, Presumed Fault and State Responsibility in E-Administrative Failures, In Administrative Law for the 21st Century, Cham: Springer, 2024, PP. 91- 105.

[5] OECD, Digital Government Review of Slovenia: Leading the Digital Transformation of the Public Sector, OECD Publishing, Paris, 2022.

[6] Duncan Fairgrieve and François Lichère. France. In Liability of Public Authorities in Comparative Perspective, edited by Duncan Fairgrieve and François Lichère, Cambridge University Press, Cambridge, 2017.

Similar to the French strategy, the UK's no-fault compensation policy in some public services aims to minimize litigation and expedite compensation procedures.

This presumption is based on the idea that, even in cases when a fault is not directly identified, the circumstances surrounding the damage strongly imply one. However, in order to apply supposed error, several requirements must be met:

- Definite Damage and Causal Link: There must be unmistakable proof of damage and a believable link between the damage and the operation of the public facility.
- Highly Likely Error: Even if an error cannot be detected with certainty, the facts should strongly imply that it occurred.
- Serious and Disproportionate Damage: The harm must be substantial and disproportionate to what was anticipated from the rendered service.

Even in cases when there is no concrete proof of culpability, this approach guarantees compensation for anyone harmed by public services. Additionally, it encourages public officials to uphold high standards of service delivery because they are aware that failure to do so may result in implied culpability. Critics counter that presumed error unfairly places the burden of proof on public authority, which could result in unfair liability. Once more, it can be difficult to determine whether supposed mistake applies, particularly when it comes to electronic public facilities where technological problems can have multiple facets. Furthermore, the use of presumed error may result in more lawsuits against public officials, which would raise questions about how best to allocate resources and the possibility of defensive tactics that could degrade the quality of services.

In order to improve adaptability and responsiveness, administrative judges are given considerable latitude in the application of French administrative law. The varied nature of administrative actions and the unique circumstances of each case may not be addressed by a strict application of the law. There are two sides to the discretion given to administrative judges when using the presumption of error. It offers the adaptability required to handle the particulars of every situation, but it also brings with it difficulties with predictability and consistency. For example, the concept of legal certainty can be undermined by excessive judicial discretion, which can result in conflicting verdicts[1]. When judges are given a lot of discretion in deciding whether the presumption of error applies, same instances may have different results depending on the judicial interpretation of each judge. This fluctuation can undermine public confidence in the legal system and make it difficult for public officials to predict potential legal repercussions. Nonetheless, this can be lessened by using the proportionality principle, which can serve as a check on the arbitrary use of discretion. Judges are therefore influenced by this principle when rendering decisions that strike a balance between the rights of public authority and the purposes of justice. This promotes justice and accountability by guaranteeing that discretion is used within appropriate limitations[2]. Judicial monitoring is essential in situations involving intricate administrative procedures, including those pertaining to electronic public services. The complexities of technical considerations can make a simple defect assessment impossible. In these situations, the presumption of error enables courts to assign blame in a way that takes into account the intricacies of the administrative procedure, guaranteeing that people are not denied redress because of the technicality of the problem.

The concept of "presumed error" permits the attribution of liability even in the absence of concrete proof of wrongdoing by transferring the burden of proof to the public authority. This concept, for instance, requires the administration to prove the absence of culpability or the involvement of an outside cause in situations when there is

[1] Jean Massot, The Powers and Duties of the French Administrative Law Judge, In Comparative Administrative Law, edited by Susan Rose-Ackerman, Peter L. Lindseth, and Blake Emerson, Edward Elgar Publishing, Cheltenham, 2017, PP. 435- 445.

[2] Jerzy Parchomiuk Abuse of Discretionary Powers in Administrative Law, Evolution of the Judicial Review Models, from "Administrative Morality" to the Principle of Proportionality, Vol. 26, Issue. 3, 2018, P. 453.

insufficient direct proof of fault. This makes it easier to compensate the harmed party[1]. However, it could be claimed that by placing an unwarranted evidential burden on public authority, the presumption of error compromises legal certainty. The burden of proof rests with the claimant, according to traditional legal norms. Deviation from this standard could result in unforeseen consequences and possible administrative liability overreach. Furthermore, it can be realistically difficult for the administration to prove blame or external causation, particularly when handling intricate administrative actions. The distinction between strict liability and fault-based liability is thus muddled by the presumption of error. Therefore, in order to resolve the issues raised by this concept, judicial review and possible legislative improvements would be crucial.

Through the use of the phrase "The damage reveals a defective performance of the public facility that naturally leads to the establishment of administrative responsibility," the Conseil d'État and lower administrative courts have indirectly or implicitly indicated the principle of "presumed error". This implies that damage inevitably signifies a malfunction in the operation of the public institution, proving the administration's responsibility. The phrase changed over time to: "The damage reveals an error in the organization or management of the facility that naturally leads to..." This change suggests a clearer mention of managerial or organizational mistakes as the foundation for culpability. The courts highlight the obligation of public bodies to uphold high standards in the administration and execution of public services by imposing liability based on assumed faults in these areas[2].

Because consumers usually interact with electronic public services remotely, without direct monitoring of the underlying systems, pinpointing the exact cause of the issue becomes extremely difficult. Therefore, users can encounter problems like access issues, data discrepancies, or system malfunctions. Users frequently lack the knowledge and resources necessary to look into and determine the precise nature of the issue due to the technological complexity involved. Users might be unfairly denied compensation in the absence of the presumption of error since they would be unable to produce comprehensive proof of the error. The French Conseil d'État granted permission to apply the "presumed error" principle to the field of electronic public utilities in the landmark Savelli case (hospital-acquired diseases) in 1960[3]. The provisions of civil liability for the custodian of the item (responsabilité du fait des choses), which impose obligation on individuals in charge of things that need special care, have therefore been claimed by certain legal scholars to be applied similarly to electronic public infrastructures. In this case, the judiciary upholds the concept of access to justice by transferring the burden of proof to the public authority, ensuring that users are not penalized for events beyond their control. As long as the damage is obvious and the circumstances point to a management or organizational failure at the facility, it should be verified that supposed fault is linked to the electronic public facilities[4].

3.3. Liability Without Fault:

Liability without negligence has become a key concept in contemporary administrative jurisprudence, especially when it comes to public service endeavors requiring intricate technology systems. Administrative accountability has historically required fault, either through an established error or an assumption of one. The state may be held accountable for damages brought on by its actions even in the absence of culpability, according to recent legal developments, which show a substantial shift toward objective liability. In the digital age, when electronic public administration necessitates the deployment of complex digital infrastructures that may unintentionally inflict harm, the idea of no-fault liability—also known as responsabilité sans faute in French administrative law—is particularly

[1] R. Widdershoven, French State Liability Law – from Path Dependency to Europeanisation?, British Association of Comparative Law, 2023, P. 25.

[2] G. Della Cananea, National and European Dimensions of French Administrative Law, British Association of Comparative Law, May 2023, PP. 1-5.

[3] Vincent Rivollier, Medical compensation under French law: fault, no-fault, and the point of liability, Otago Law Review, Vol. 16, 2019, P. 179.

[4] Jean-Victor Maublanc, Digitization of Procedures: The French Supreme Administrative Court Establishes a Presumption of Malfunction of the Public Purchaser's Dematerialization Platform Due to Difficulties in Downloading the Tenderer's Offer, Concurrences, September 2021, PP. 195–198.

pertinent. For example, even though the administration had taken adequate precautions and had not engaged in any particular act of negligence, the impacted individuals may be entitled to compensation if a cyberattack compromises the data systems of a public facility, jeopardizing personal information or service continuity[1]. In its historic decision in Natsionalna agentsia za prihodite (C-340/21), the European Court of Justice (ECJ) reaffirmed this idea, holding that the General Data Protection Regulation (GDPR) may consider the mere fear of personal data misuse after a cyber incident to be non-material damage, triggering the state's duty to compensate[2].

To further ensure that victims are not overburdened with proving technical fault, legal scholars have argued that the threshold for administrative liability should be changed in cases involving high-risk digital operations, such as biometric data processing, AI-driven public decision-making, and nationwide databases. These opinions are consistent with the public law precautionary principle, which requires administrative entities to foresee risks and pay for any consequent losses as part of their duties to the public.

In situations involving abnormal and exceptional risks (le risque spécial et anormal), including those posed by governmental technological efforts, nations like France and Egypt recognize no-fault responsibility under comparative law[3]. These frameworks guarantee fair treatment of citizens impacted by state-initiated digital transitions and are both morally and legally required. Therefore, whether by creating new cases in this area or by codifying the accepted judicial principles in the area of culpability without error, the legislature was instrumental in promoting this duty. Furthermore, unlike responsibility based on error, which necessitates the presence of the three traditional elements—the error, the damage, and the causal relationship—responsibility in this context is established once two fundamental elements are present: the damage or harm and the causal relationship between it and the administration's lawful activity. Regarding "harm," the judiciary of the French State Council demands extraordinary circumstances in order for the element of injury to establish culpability without fault; the harm in this context must be unique and exceptional. While uncommon harm indicates that it is of a certain level of seriousness that makes it unusual, specificity indicates that the harm is intended at a specific individual or at individuals themselves. Therefore, the judiciary established administrative accountability without fault for electronic public services based on the concept of risks and the equality of persons before public obligations. In certain legal systems, the phrase “risk liability” is used interchangeably with “liability without fault”.

3.3.1. No Liability for Errors Based on Risk:

The idea of risk responsibility (responsabilité pour risque) has become a fundamental component of liability without fault in contemporary administrative jurisprudence, especially in the French legal tradition. This idea, which has its roots in a practical and ethical justification, illustrates a shift away from a system that places blame and toward one that prioritizes the fair allocation of damages resulting from public actions. The fundamental idea of risk theory is that, independent of any demonstrated wrongdoing or carelessness, the person who generates a risk and gains from it must also take responsibility for its manifestation. This idea has been crucial in determining state accountability, particularly in situations when harm results from the inherent risks of legitimate official action rather than from illicit activity.

This approach has long been accepted by French administrative courts, especially the Conseil d'État, which has used it in a number of crucial areas. Notably, in cases involving dangerous products, public works projects, medical facility operations, and state-run operations requiring high-risk procedures, jurisprudence has acknowledged accountability without fault. In these situations, the administration is held accountable for exposing people to abnormal dangers in the name of the public good, not for making a mistake.

[1] Cane, Op, Cit, P. 189.

[2] European Court of Justice, Case C-340/21, Natsionalna agentsia za prihodite, ECLI:EU:C:2023:994, 14 December 2023.

[3] Nadia Yas Al-Bayati and Mohamed Najm, The Legal Basis of Administrative Liability for Damage: An Analytical Study in the French Judiciary, Journal of Legal and Political Studies, Al-Miʿyār, Vol. 8, Issue. 8, 2020, PP. 4– 12.

The French approach to travaux publics (public works), where liability is incurred not because of proved negligence but rather because people experience particular or excessive injury as a result of otherwise legal infrastructure projects, demonstrates this conceptual movement. This strategy is best shown by the landmark Cormier decision, where the Conseil d'État upheld the possibility of compensation for harm caused by public works even in the absence of administrative misconduct[1].

Similar to this, the state's role in public hospitals has come to be seen more and more through the prism of risk. Courts have acknowledged that exposure to institutional risks alone is sufficient to establish responsibility in circumstances where patients are injured due to hospital-acquired infections or defective medical equipment. The fundamental justification is distributive justice, which is focused on the fair distribution of harm brought about by collective services, rather than corrective justice, which is based on blame[2].

When it comes to risky items and techniques used by public authority, such as firearms, explosives, or hazardous chemicals, the risk theory is further applied. Even when handled properly, these objects provide an inherent risk that, if acknowledged, places the onus of harm on the government. This application focuses more on recognizing that individuals who oversee dangerous tools in the service of the public must also pay for any injuries caused by such tools than it does on penalizing mistakes[3].

Furthermore, the acceptance of risk liability demonstrates a deeper philosophical commitment: the state must serve as a last-resort insurer since it is the main actor in society. A solidaristic view of public law, in which the state not only controls risk but also bears it on behalf of its people, is reflected in this dedication. This approach changes administrative law from a strict system of fault-based responsibility into a more compassionate, socially responsive framework, as noted by René Chapus[4].

By enforcing the no-error liability principle, the French legal system upholds a core tenet of public law: that the individual should not bear an excessive burden of public service. This strategy strikes a nuanced compromise between the demands of justice and administrative effectiveness. Public institutions are now more vulnerable to new types of harm, such as hacking, cyber espionage, and data breaches, as a result of our increasing reliance on digital infrastructure. Even though these actions are usually carried out by outside parties, they can seriously harm public infrastructure and services by causing disruptions, exposing private information, and undermining public confidence. The idea of responsabilité sans faute finds additional significance in the context of these changing challenges, especially when it comes to risk liability.

- Hacking is the deliberate infiltration into electronic systems in all of its forms. This could involve using malicious code to exploit software flaws, altering transmission protocols, or gaining unauthorized access to private information. Economic espionage, political sabotage, or data theft are the goals in some situations. Such attacks, in whatever form, are directed at the digital governance infrastructure itself.
- Electronic danger also includes espionage and the following unapproved release of private information. This includes the disclosure of material that was meant to be kept private and was retained by the state or a particular institution. Whether it concerns national security, citizen personal information, or the workings of state institutions, the public revelation of such data can have just as detrimental an impact as physical assaults on public infrastructure or risky behaviors.

A workable approach for dealing with these problems is provided by French administrative jurisprudence, which is based on the principle of risk. Similar to how courts have imposed culpability for damages resulting from the

[1] Conseil d'État, 2ème et 7ème sous-sections réunies, 26/11/2012, 354108, Publié au recueil Lebon.

[2] Jean Rivero and Jean Waline, Droit administratif, 20th ed, Dalloz, Paris, 2022, PP. 812–814.

[3] Pierre Delvolvé, La responsabilité sans faute de l'administration, Revue française de droit administrative, Vol. 25, Issue. 2, 2020, PP. 230–240.

[4] René Chapus, Droit administratif général, 15th ed, Montchrestien, Paris, 2001, P. 1032.

handling of dangerous goods or faulty public infrastructure, they can also apply this principle to the issue of digital vulnerability. The same legal reasoning applies in this case: the state bears the obligation for managing the risks involved when it gains from the digitization of public services and electronic governance. Like physical infrastructure, cyber infrastructure is inherently vulnerable to damage. The disproportionate expense of such exposure should not fall on the people or organizations impacted by cyberattacks, especially when those assaults target public services. So, whether a person suffers a privacy violation, financial loss, or reputational harm as a result of a breach of state systems, this qualifies as an anomalous and unique suffering warranting reparation. In this regard, hacking and data leaks that impact public electronic facilities ought to be handled in the same way as tangible harm brought on by institutional carelessness or public works projects. The state's duty to provide compensation should be triggered by the mere exposure to anomalous risk emanating from public digital infrastructure, regardless of whether the attacker is recognized or stays anonymous, and even if the breach happens without any internal misbehavior.

Though scholars and certain judicial trends support applying risk liability to digital infrastructure, particularly when public systems are compromised and citizens suffer specific harms, it should be noted that liability without fault has not yet been fully codified in French law for cyber incidents. According to German law, a public authority cannot be held liable unless they breach a public obligation and cause harm to a third party[1]. It is more difficult to establish liability without error because this typically needs fault (purpose or negligence). Nonetheless, compensation might be provided in specific situations, such as when essential infrastructure is not secured or when the data protection law's obligation to protect personal data (DSGVO/GDPR) is broken. Regarding stringent or risk-based culpability for cyber incidents, there is still a gap. The idea of sovereign immunity, which states that the federal or state governments cannot be sued unless they agree through law, has a significant influence on the U.S. legal system. Although there are several exclusions permitted by the Federal Tort Claims Act (FTCA), cyber incidents are not specifically covered. Courts have historically been hesitant to impose culpability without explicit statutory permission or proof of egregious conduct, notwithstanding recent litigation that has attempted to hold the government accountable for data breaches, particularly those involving federal agencies (such as the 2015 OPM hack)[2]. Although there have been few remedies, the government's obligation to protect data may give rise to constitutional privacy concerns. Lastly, in the UK, people can file claims under data protection laws (particularly the Data Protection Act 2018 that implements GDPR) or negligence laws. Claims for cyber events involving data owned by the government usually involve a proven loss and a breach of duty of care. Although courts frequently set a high bar for liability, there have been several attempts at class action following significant data breaches involving public bodies (such as the NHS). Claims may also be based on the Human Rights Act of 1998, particularly Article 8 (right to private life), although there are again few remedies available unless there is evidence of serious harm.

Many nations place a high priority on cybersecurity as a governmental function for national security, occasionally limiting liability to prevent impeding defense operations. Legal systems may need to create doctrines akin to risk liability or no-fault compensation in physical infrastructure law as cyber dangers change. In this sense, the French risk theory offers a viable foundation for this kind of development, pointing the way for other common law and civil law jurisdictions to modify their legal systems to accommodate the digital era. Therefore, when based on the notion of risk, the logic of responsabilité sans faute offers a moral and legal basis for expanding state accountability into the digital realm. It is consistent with a more comprehensive view of public law, where the state guarantees justice in the face of modern technology threats in addition to acting as a regulator and protector.

3.3.2. Equality Before Public Burdens: No Error Liability

The two primary grounds for liability without fault recognized by French administrative law are equality before public burdens, which emphasizes that legitimate administrative action shouldn't cause disproportionate harm to individuals or groups, and risk theory, which highlights the existence of abnormal danger or technical hazard. Both

[1] Helmut Koziol and Barbara C. Steininger, European Tort Law, Springer, Vienna, 2008, PP. 137–138.

[2] In re Office of Personnel Management Data Security Breach Litigation, 928 F.3d 42, D.C. Cir. 2019.

frameworks uphold the notion that state liability is redistributive as well as corrective, acknowledging that justice in public administration must take into consideration both individual loss and group gain. One of the fundamental tenets of individual liberties and rights is the equality of people before burdens. Everybody must pay these taxes and public expenses when they are imposed by the state; no one may avoid them or have them placed on them. Even when there is no unique risk involved but harm is an unavoidable and disproportionate result of activities committed for the public benefit, this argument warrants culpability based on distributive fairness. This principle states that the state must make sure that no one person or small group is disproportionately affected negatively by measures it takes that serve the public good. If such harm takes place, compensation becomes an obligation based on equity and fairness rather than merely an administrative choice. This equality-based obligation addresses routine administrative actions that, while legal and generally advantageous, result in specific, direct, and unique harm to certain people. In this case, the harm or injury is a predictable and essential byproduct of the state's pursuit of the general welfare[1] rather than an incidental or unusual one. In this case, the harm results from the unequal distribution of the responsibilities that public policies invariably create rather than from a breakdown in public service or a duty violation. Therefore, the law requires the state to restore equality through compensation even in the absence of danger or administrative error. This was made abundantly evident in the landmark case of Couitéas, when the principle of equality before burdens dictated that compensation was due for the substantial and individualized injury caused by the unwillingness to expel squatters from private land, even though it was legally authorized in the purpose of maintaining public order[2].

The reasoning is simple: it is unfair for only a select few to experience the negative externalities of public policies if they are intended to benefit society as a whole. The state must acknowledge that the collective benefit must be matched by an equal allocation of expenses, for instance, when infrastructure investments result in expropriation, interruption, or financial loss to particular persons. Furthermore, this type of liability is especially pertinent in modern fields like cybersecurity, urban planning, and environmental regulation, where the harm is frequently caused by necessary and extensive administrative activity rather than dangerous practices. In the digital age, the same reasoning holds true: if the government digitizes its services for efficiency and the good of the country and a specific citizen is harmed by a systemic failure or data compromise, compensation ought to be provided—not due to risk or fault, but rather because an imbalance in burden has arisen[3].

The principle of equality before public services (égalité des usagers devant le service public), which states that all people in the same legal situation should have equal access to public services regardless of personal characteristics like wealth, location, or background, is one of the fundamental promises of e-administration. Theoretically, e - administration upholds this idea by providing services continuously and remotely and by eliminating geographical and temporal constraints. In actuality, though, digital inequality adds a new level of prejudice that jeopardizes the fundamental ideal that e-administration is supposed to support. Even if the statutory requirements for using public digital services are implemented consistently, some groups may be de facto excluded due to structural and technological inequalities, such as unequal access to devices, internet connectivity, and digital literacy. Even though they are legally entitled to e-services, people who are elderly, economically disadvantaged, or lack digital literacy may find it difficult or impossible to use them[4].

Furthermore, public digital services might only be accessible in specific regions or might be tailored for particular hardware or operating systems, resulting in an unequal environment where equal rights are not accompanied by equal capabilities. Therefore, even while the law acknowledges that all individuals are equal before the public service, the way eadministration is designed and implemented may result in unfair treatment and unintentionally limit access to privileged groups—those who have the requisite technical resources and expertise. These

[1] Chapus, Op, Cit, PP. 1042- 1046.

[2] Conseil d'État, Couitéas, 30 November 1923, Rec. Lebon, P. 789.

[3] Frédéric Rolin, L'égalité devant les charges publiques à l'ère du numérique, Revue française de droit administratif, Vol. 35, Issue. 3, 2019, PP. 510–519.

[4] Mireille Delmas-Marty, Libertés et droits fondamentaux, Seuil, Paris, 2020, PP. 232–234.

discrepancies go against the fundamental administrative law tenet that all users must have nondiscriminatory access to public services. Scholars of French administrative law have pointed out that formal legal equality is only as significant as material equality in service access. When the state decides to digitize vital services, it also takes on the responsibility of making sure that everyone can use them, including through universal service design, targeted assistance for vulnerable customers, and supplementary analog channels[1].

The French Conseil d'État has long maintained that, particularly in cases where new modalities are implemented, access to public services must be tailored to the requirements and abilities of users. The logic of equality before public burdens and public services would imply that any public service transformation, digital or otherwise, must take into account and mitigate systemic disadvantages that prevent equal enjoyment of public rights, even though comprehensive jurisprudence in the field of e-administration is still lacking. Therefore, eadministration runs the risk of going against the fundamental tenet of treating all users equally when it replaces traditional service routes without guaranteeing inclusive access. In these situations, structural exclusion—a failure to design systems that fulfill the universal accessibility inherent in public service obligations—may give rise to administrative culpability rather than technological malfunction or negligence.

3.3.3. Refusing Liability For Errors:

By proving that there was no negligence or error on the part of the public authority that caused the damage, the authority can disprove this assumption of error. This can be accomplished by proving that an outside factor—such as the injured party's activities, the actions of a third party, or force majeure—caused the damage and was beyond the authority's control[2]. The public authority might not be held accountable, for example, if a user unintentionally caused the damage by their own conduct or if an unforeseen circumstance resulted in the damage. Liability is therefore not absolute in the absence of fault. General principles of causation still apply to it. Notably, the administration can be absolved of all or part of its culpability by claiming the existence of a foreign cause (cause étrangère), which is an outside factor that breaks the causal link between the administrative action and the harm. In this context, foreign causes are grouped based on how they affect the legal attribution of liability[3]. Whether or not the administration is held liable, there are several circumstances that totally absolve them. These include the victim's act (le fait de la victime), which occurs when the harmed party is accountable for their own injury due to careless or deliberate behavior, and force majeure (la force majeure), which is an unpredictable, unavoidable, and external event.

However, other causes—like a third party's mistake or a fortuitous event (le fait d'un tiers or cas fortuit)—usually only result in exoneration in cases involving guilt; they do not stop culpability without fault, especially when it comes to the theories of risk or equality before public duties[4].

For electronic public facilities, this divergence has important ramifications. Since many of these services are digital and run continually, there is a significant chance that outside threats, technical malfunctions, or third parties will interfere. However, unless they satisfy the strict requirements of a foreign cause that can sever the causative link91, these do not always absolve the administration of culpability[5]. For example, the administration can successfully reject responsibility in the framework of culpability without fault only under the following situations:

[1] Jean Waline, L'égalité des usagers devant le service public à l'ère du numérique, Revue française de droit administratif, Vol. 36, Issue. 2, 2020, PP. 215-225.

[2] Vincent Rivollier, Medical compensation under French law: fault, no-fault, and the point of liability, OtaLawRw 10; 2019, 16 Otago LR , P. 179.

[3] Pierre Delvolvé, Responsabilité de l'administration et cause étrangère, Revue française de droit administratif, Vol. 17, Issue. 2, 2001, PP. 235-243.

[4] Frédéric Rolin, Cyberadministration et responsabilité: la force majeure est-elle encore invocable?, Les Petites Affiches, Issue. 150, 2020, PP. 12-18.

[5] Frédéric Rolin, L'administration numérique et la responsabilité sans faute: vers une nouvelle catégorie de risques?, Revue française de droit administratif, Vol. 38, Issue. 2, 2022, PP. 210-219.

- The disruption of underwater internet connections due to a force majeure event, like a deep-sea earthquake, could cause administrative websites or services to go offline. Unpredictability, irresistibility, and exteriority in relation to the administration's sphere of influence are characteristics of such an event.
- The victim's action, such as when a citizen willfully creates a system error that causes their self-injury, carelessly enters inaccurate data, or abuses the digital platform[1].

However, in situations of liability without fault, factors like a third party's mistake (for example, a hacker breaching the public platform's security infrastructure) or an unexpected technical issue (for example, a virus interfering with public servers) typically aren't enough to break the chain of causation[2]. In the context of contemporary digital administration, these causes are not unexpected even though they are outside the administration's control. Courts are likely to take into account the administration's obligation to foresee and protect against such risks, particularly when handling critical public services, given the recognized incidence of cyber-attacks. In this perspective, a cyberattack does not represent a force majeure event; rather, it is a typical aspect of digital risk that the administration needs to understand and protect against[3].

Conclusion:

The study highlights that digital technical failures are no longer merely technical glitches, but have become a real source of administrative accountability, especially in an environment increasingly dependent on digital systems for public service delivery. The results showed that the administration bears a significant portion of the responsibility for these failures, whether the error is proven or not, as long as the damage occurred and could have been avoided through preventative measures and sound management. It also demonstrated that the absence of effective technical planning and weak digital governance increase the likelihood of system failures and undermine customer confidence in public services. Therefore, achieving a balance between digital modernization and the administration's legal liability is essential to ensuring service sustainability and efficient performance.

The legal approach revealed that determining the administration's liability for digital technical failures is linked to the degree of error and the possibility of proving it. The administration remains responsible whenever it is proven to have failed to take measures to prevent the failure or mitigate its effects. In cases where it is difficult for the injured party to prove the error, accountability for the administration is justified based on the presumption of presumed error, especially when the failures are recurrent or result from a clear oversight weakness. In cases involving vital facilities or essential services that cannot be interrupted, the administration may be held liable even in the absence of fault, based solely on the theory of harm. This reflects an evolution in legal thought toward protecting digital rights and compensating for associated damages. This trend reinforces the need for the administration to adopt proactive policies and secure technologies to limit liability and enhance public confidence in the digital system.

Acknowledgement

The author would like to express sincere gratitude to the University of Abderrahmane Mira – Béjaia, Faculty of Law and Political Sciences, for providing the academic environment and resources necessary to conduct this research. Special appreciation is extended to colleagues and fellow researchers who provided valuable feedback and constructive insights during the preparation of this study.

Conflict of Interest

[1] Jean-Bernard Auby, Le droit de l'administration numérique, Dalloz, Paris, 2021, PP. 103–105.

[2] European Court of Human Rights, López Ribalda v. Spain, App. No. 1874/13, judgment of 17 October 2019.

[3] Mireille Hildebrandt, Algorithmic Accountability in Public Administration: A Legal Perspective, Artificial Intelligence and Law, Vol. 28, Issue. 4, 2020, PP. 403–420.

The author declares no known financial or personal conflicts of interest that could have influenced the research, analysis, or conclusions presented in this paper.

References

1. Bloomberg, J. (2018). Digitization and digital transformation: Confuse them at your peril (p. 6). Forbes.
2. Katz, R., & Koutroumpis, P. (2012). Measuring socio-economic digitization: A paradigm shift (p. 35). Columbia Institute for Tele-Information.
3. Ruiz, M., & Soto, A. (2013). National digital strategy. National Digital Strategy Coordinator.
4. Tang, C., & Perumal, R. M. (2013). The characteristics and values of e-governance and the role of e-democracy. International Journal of Humanities and Management Science, 1(1), 142.
5. Singh, A. (2023). E-governance: Moving towards digital governance. Vidya: A Journal of Gujarat University, 2(1), 204–215.
6. OECD. (2020). The OECD digital government policy framework: Six dimensions of a digital government. OECD Publishing. https://doi.org/10.1787/4de9f5bb-en
7. Charalabidis, Y., Flak, L., & Pereira, G. (2022). Scientific foundations of digital governance and transformation: Concepts, approaches and challenges. Springer.
8. Jopang, J., Aryatama, S., Muazzinah, M., & Qamal, Q. (2024). Exploring the relationship between e-government, transparency, and citizen trust in government services. Global International Journal of Innovative Research, 2(6), 1354–1363.
9. Bora, I., Duan, H. K., Vasarhelyi, M. A., Zhang, C., & Dai, J. (2021). The transformation of government accountability and reporting. Journal of Emerging Technologies in Accounting, 18(2), 1–21. https://doi.org/10.2308/jeta-19-005
10. Ibrahimy, M. M., Norta, A., & Normak, P. (2023). Blockchain-based governance models supporting corruption-transparency: A systematic literature review. Blockchain Research and Applications, 5(2), 1–21.
11. Nabben, K., & De Filippi, P. (2024). Accountability protocols? On-chain dynamics in blockchain governance. Internet Policy Review, 13(4), 1–22.
12. Straub, V. J., Hashem, Y., Bright, J., Bhagwanani, S., Morgan, D., Francis, J., Esnaashari, S., & Margetts, H. (2024). AI for bureaucratic productivity: Measuring the potential of AI to help automate 143 million UK government transactions (pp. 1–18).
13. Deloitte. (n.d.). AI: Can smart technologies drive government efficiency? Retrieved from https://www.deloitte.com/us/en/Industries/government-public/articles/ai-in-federal-government.html
14. Djatmiko, G. H., Sinaga, O., & Pawirosumarto, S. (2025). Digital transformation and social inclusion in public services: A qualitative analysis of e-government adoption for marginalized communities in sustainable governance. Sustainability, 17(7), 3–4.
15. Chary, M. (2011). Social equity, the digital divide and e-governance: An analysis of e-governance initiatives in India (p. 65). University of South Florida.
16. Kolotouchkina, O., Barroso, C. L., & Sanchez, J. L. M. (2022). Smart cities, the digital divide and people with disabilities. Cities, 123, 1–4.
17. OECD. (2024). Enabling digital innovation in government: The OECD GovTech policy framework. OECD Publishing.
18. Al-Ansi, A. M., Garad, A., Jaboob, M., & Al-Ansi, A. (2024). Elevating e-government: Unleashing the power of AI and IoT for enhanced public services. Heliyon, 10, 10–11.
19. Janssen, M., Hartog, M., Matheus, R., Ding, A. Y., & Kuk, G. (2022). Will algorithms blind people? The effect of explainable AI and decision-makers' experience on AI supported decision-making in government. Social Science Computer Review, 40(2), 478–493.

RESEARCH ARTICLE

Dynamique émotionnelle et mobilisation dans les techno-discours : analyse multimodale et argumentée du cas de la disparition de Marwa (mai 2025)

Emotional Dynamics and Mobilization in Techno-Discourse: A Multimodal and Argumentative Analysis of the Case of Marwa's Disappearance (May 2025)

Behout Asma
Doctorante
Laboratoire LIRADDI, Université d'Alger 2
Alger
Email: asbehout@gmail.com , Orcid: https://orcid.org/0009-0007-9830-0990

Ait Dahmane Karima
Professeure
Laboratoire LIRADDI, Université d'Alger 2
Alger
Email:karima7aitdahmane@gmail.com , Orcid: https://orcid.org/0009-0006-3962-0639

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords analyse du discours numérique, dynamique émotionnelle, interaction émotionnelle, réseaux sociaux, sémiodiscursivité.

Abstract
L'enlèvement de la petite Marwa, survenu le 22 mai 2025 à Constantine, a suscité une vive émotion collective, dont les réseaux sociaux ont constitué les principaux vecteurs de diffusion, de réception et d'amplification. Cet article examine, à partir de l'analyse d'un corpus de commentaires publiés sous une publication Facebook du journal Tout sur l'Algérie (TSA), la manière dont les internautes ont verbalisé, mis en scène et partagé leurs émotions. L'étude mobilise trois approches complémentaires : l'écologie discursive de Marie-Anne Paveau (2017b), la sémiodiscursivité émotionnelle de Raphaël Micheli (2014) et l'interaction argumentative de Christian Plantin (2011). Ce croisement théorique permet d'appréhender comment les émotions s'inscrivent dans des formes discursives composites et multimodales, façonnées par les « affordances » propres aux plateformes. L'objectif n'est pas de sonder l'intériorité affective des individus, mais d'analyser comment ces émotions sont formulées, données à voir et mobilisées pour produire des effets dans un espace numérique à forte charge affective.

Citation. Behout, A., Ait Dahmane, K., (2025). Dynamique émotionnelle et mobilisation dans les techno-discours: analyse multimodale et argumentée du cas de la disparition de Marwa (mai 2025). *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 210–228.
https://doi.org/10.56352/sei/8.11.15

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 30.05.2025 | Accepted: 17.06.2025 | Published: 28.08.2025 (available online)

Introduction

Les crimes touchant à l'enfance suscitent toujours une mobilisation émotionnelle particulièrement intense au sein des sociétés contemporaines. Chaque drame impliquant une victime mineure déclenche souvent une vague d'émotions collectives qui

traverse les familles, les institutions et, aujourd'hui, les espaces numériques. L'enlèvement de la petite Marwa Boughachiche, collégienne de 12 ans à Constantine, le 22 mai 2025, illustre de manière frappante ce phénomène. Le jour de sa disparition, elle quitte l'école à 10 h, après son dernier examen, et s'évapore sur le chemin menant à son domicile. Sans aucune trace, la famille sombre dans l'angoisse et la ville entière se trouve en état d'alerte. Très vite, le portrait de Marwa envahit les réseaux sociaux, amorçant une forte mobilisation en ligne.

Initialement traité comme un fait divers dramatique, l'événement prend rapidement la forme d'un phénomène social et discursif de grande ampleur. Les premières réactions numériques, notamment celles publiées sur la page Facebook du journal Tout sur l'Algérie (TSA), génèrent des centaines de réactions et de partages. Le corpus retenu dans cette étude, constitué de vingt-cinq commentaires publics postés le 25 mai 2025, reflète la diversité des émotions exprimées : colère, compassion, indignation, appels à la vigilance et débats sur la responsabilité parentale. Ces échanges témoignent d'un engagement émotionnel collectif dépassant largement le cercle familial ou local.

Dans ce travail, nous employons le terme « émotion » pour désigner une expérience collective et discursive, observable à travers des messages, des images, des signes typographiques et des symboles circulant dans les espaces numériques. À l'inverse, « l'affect » fait référence, selon Plantin (2021), à un état moins conscient et plus diffus, distinct de l'émotion manifeste dans la sphère publique.

Le web ne se limite plus, dans ce contexte, à un rôle de relais médiatique ; il constitue aujourd'hui un espace de co-construction, de circulation et de transformation du vécu émotionnel. Les formes d'expression, combinant mots, images, émojis et hashtags, produisent un flux structuré d'échanges. Ce flux s'organise conformément à ce que Paveau (2017b) définit comme une « écologie discursive », où s'entremêlent éléments textuels, visuels, sonores et technologiques. Cet agencement donne naissance à de nouvelles formes énonciatives qui modulent la production comme la réception des émotions.

L'émotion dans les discours numériques relève à la fois de l'acte d'énoncer, de la mise en scène (ou « émotion montrée ») et de l'élaboration d'arguments étayés par l'affect (Micheli, 2014). Elle se manifeste dans la langue, à travers des icônes, des récits personnels et par le biais de stratégies d'appel à la solidarité ou à la polémique. L'espace numérique connecte des internautes aux horizons variés et favorise l'émergence de récits collectifs, où la douleur individuelle se transforme en mémoire sociale. Cette mémoire est continuellement reformulée et réactivée à chaque nouvelle interaction.

Les échanges autour de l'affaire Marwa constituent ainsi un terrain d'observation privilégié. Ils rendent visible la manière dont une société mobilise ses émotions pour réagir, débattre, contester et influencer les discours sur la sécurité et la responsabilité collective. Les internautes ne se limitent pas à commenter : ils co-construisent et modulent le débat, amplifiant certaines émotions, en atténuant d'autres ou en introduisant des contradictions. Ces pratiques rejoignent les analyses de Plantin (2011) sur la dimension argumentative des émotions.

Cette recherche repose sur un corpus natif issu de Facebook, composé de vingt-cinq commentaires publics postés le 25 mai 2025. L'analyse combine trois perspectives : l'écologie discursive (Paveau, 2017b), la typologie de la sémiodiscursivité émotionnelle

(Micheli, 2014) et l'analyse interactionnelle des émotions et de l'argumentation (Plantin, 2011). Elle apporte un éclairage sur un phénomène encore peu étudié en littérature francophone : la mise en discours et la circulation d'une mobilisation émotionnelle au sein d'un événement d'actualité, dans un espace numérique natif.

Trois questions de recherche guident notre démarche :

1. En quoi l'environnement numérique façonne-t-il l'expression de ces émotions ?
2. Comment les émotions sont-elles discursivement construites, modulées et partagées selon la typologie de Micheli ?
3. Quels mécanismes interactionnels, tels que l'amplification, l'atténuation ou la contradiction, sont mobilisés par les internautes pour défendre leurs positions ?

Au croisement de ces perspectives, cette recherche ambitionne de révéler les dynamiques complexes de production et de diffusion des émotions collectives au cœur d'un drame criminel marqué par une forte charge pathémique, tout en contribuant à enrichir la compréhension d'un domaine encore largement à défricher : celui des interactions discursives propres aux espaces numériques contemporains, lesquels forment désormais le théâtre privilégié des engagements émotionnels et collectifs**.**

2.Cadre théorique

Pour comprendre la dynamique émotionnelle à l'œuvre dans les discours numériques liés à la disparition de la petite Marwa, il est essentiel de mobiliser un cadre théorique pluriel. Celui-ci croise trois perspectives complémentaires : l'écologie discursive (Paveau, 2017b), la sémiodiscursivité émotionnelle (Micheli, 2014) et l'analyse interactionnelle de l'argumentation (Plantin, 2011). Chacune de ces approches éclaire la manière dont les émotions s'inscrivent, circulent et se transforment dans les **t**echnodiscours natifs du Web.

2.1 L'approche écologique d'Anne-Marie Paveau

Pour Paveau (2017b), le discours numérique ne saurait se réduire à une simple transposition du langage traditionnel. Elle le conceptualise comme un « technodiscours », intrinsèquement façonné par l'environnement technique qui le rend possible. Dans cette perspective, l'écologie discursive conçoit le discours comme un écosystème vivant, c'est-à-dire un entrelacement dynamique de textes, d'images, d'hyperliens, d'émojis et de technographismes (Paveau, 2016). Parmi ces ressources, les iconotextes, qui sont des objets hybrides mêlant texte et image, contribuent à forger une expressivité émotionnelle propre aux espaces numériques.

Dans cet écosystème, l'émotion dépasse le simple ressenti individuel pour devenir un phénomène discursif. Elle s'y exprime à travers de multiples dispositifs sémiotiques, s'intensifie dans les fils de commentaires, se nuance par l'usage d'émojis et s'expose dans la mise en page des publications. L'écologie discursive permet ainsi d'appréhender l'émotion comme un phénomène émergent, co-construit par les affordances techniques des plateformes, les genres natifs du Web et les pratiques collectives d'écriture et de lecture (Paveau, 2017b ; Paveau, 2017a).

Le technodiscours natif, tel que le définit Paveau, s'inscrit dans le cadre plus large du discours numérique, entendu comme « l'ensemble des productions verbales élaborées en ligne, quels que soient les appareils, les interfaces, les plateformes ou les outils d'écriture » (Paveau, 2017b, p. 8). Son analyse repose sur le principe d'une égalité théorique entre les ressources langagières et non langagières, ce qui souligne la richesse des formes discursives propres au Web 2.0 (Paveau, 2016 ; 2017b, p. 27).

Ce cadre théorique introduit des néologismes tels que technodiscours, technomot, technosigne, technogenre ou technographisme et marque une rupture épistémologique dans l'étude des discours numériques. Adopter cette approche revient à opter pour une posture post-dualiste et écologique, dans la mesure où elle dépasse les visions logo- et anthropocentrées et reconnaît le rôle actif des agents non humains, dispositifs, plateformes, outils numériques, dans la production du sens (Paveau, 2016 ; 2017b, p. 11).

Penser les émotions dans la société numérique, c'est admettre que chaque mot, image, émoji, hashtag ou hyperlien contribue à structurer le sens. Les réseaux sociaux, en tant qu'écosystèmes dynamiques, deviennent les lieux où s'entrelacent textes, images, fils de commentaires, gestes numériques et interactions. C'est dans ces espaces que les émotions collectives liées aux drames sociaux se cristallisent, circulent et s'amplifient. Paveau souligne également la richesse du commentaire conversationnel qui, au-delà de la simple fonction phatique, porte un contenu discursif et métadiscursif élaboré (Paveau, 2017b, p. 46 ; Paveau, 2016). On distingue ainsi :

- Le commentaire discursif, qui prolonge le texte initial, crée du consensus ou suscite la polémique et module les émotions ;

- Le commentaire métadiscursif, plus réflexif, qui interroge la forme même du discours et enrichit la dynamique sémiotique des échanges en ligne (Paveau, 2017b, p. 47).

Cette vision intégrative montre que les dimensions techniques et langagières ainsi que la complexité des interactions participent activement à la circulation et à la modulation des émotions dans les espaces numériques (Paveau, 2016 ; 2017b).

2.2 La sémiodiscursivité émotionnelle (Raphaël Micheli, 2014)

L'étude des technodiscours natifs du web, où circulent et se transforment les émotions, requiert un cadre théorique capable de saisir la diversité des moyens par lesquels celles-ci se manifestent et acquièrent un statut repérable dans le langage. Dans cette perspective, Raphaël Micheli (2014) propose une approche sémiodiscursive fondée sur la sémiotisation des émotions, définie comme l'ensemble des procédés, verbaux ou coverbaux, qui rendent perceptible et interprétable une émotion dans le discours. Cette notion déborde le simple lexique pour intégrer toutes les ressources langagières : choix syntaxiques, modalités prosodiques ou gestuelles, ainsi que, plus largement, les dispositifs multimodaux. Micheli (2014, pp. 18-20) concentre son analyse sur la dimension verbale, tout en soulignant que les émotions sont « à la fois dans le langage partout, et nulle part » Micheli (2014, p.8), ce qui traduit leur caractère diffus et polysémique. Sa réflexion repose sur trois principes : couvrir la diversité réelle des phénomènes avec un nombre limité de catégories analytiques ; expliciter de façon rigoureuse les critères et définitions retenus ; fournir un outil descriptif opératoire pour l'analyse de corpus authentiques (Micheli, 2014, p. 13).

C'est dans ce cadre qu'il propose une typologie articulée en trois modes fondamentaux, souvent intriqués dans les discours réels : l'émotion dite, l'émotion montrée et l'émotion étayée. Le premier mode, l'émotion dite, correspond à la forme la plus explicite de manifestation émotionnelle. L'émotion est ici exprimée clairement par un mot qui la nomme (nom, verbe ou adjectif), lié grammaticalement à la personne qui la ressent et, parfois, à son objet ou à sa cause (Micheli, 2014, pp. 22-24). Cette formulation directe, sans ambiguïté, facilite la compréhension pour le destinataire, car le discours indique à la fois le nom de l'émotion et la personne qui l'éprouve (Micheli, 2014, p. 23). Le deuxième mode, l'émotion montrée, procède par manifestation indirecte : l'émotion n'est pas lexicalement mentionnée mais suggérée au moyen d'indices discursifs, prosodiques ou graphiques (interjections, structures syntaxiques marquées, marqueurs rythmiques ou typographiques). Micheli (2014, pp. 25-28) décrit ce mode comme une propriété du message plutôt qu'un thème explicite, reposant sur un processus inférentiel de l'allocutaire. Cette analyse est approfondie dans un travail ultérieur (Micheli, 2015), qui précise les procédés de sémiotisation verbale et montre comment, dans les environnements numériques multimodaux, ils s'articulent avec d'autres formes sémiotiques pour renforcer la portée émotionnelle. Enfin, l'émotion étayée désigne un mode plus complexe, à dominante argumentative, dans lequel l'émotion est induite par la représentation discursive d'une situation conventionnellement associée à un état émotionnel particulier (Micheli, 2014, pp. 29-31 ; Micheli, 2013). L'allocutaire ne la déduit pas d'un terme explicite ou d'un indice isolé, mais à partir d'une schématisation discursive qui organise la cause et légitime l'émotion selon des normes socio-culturelles partagées. Ce mode engage ainsi la dimension évaluative et normative du discours et joue un rôle central dans la construction collective des émotions en contexte d'interaction. Pour Micheli (2014, pp. 14-15), il ne s'agit pas de compartimenter des catégories étanches : dans les pratiques discursives effectives, les trois modes se combinent, se répondent et se renforcent mutuellement. Le dire explicite fixe un cadre clair, la monstration contribue à modeler la tonalité émotionnelle, et l'étayage en justifie la présence et l'intensité dans l'espace socio-discursif. Appliquée aux environnements numériques, cette grille fournit un outil heuristique pertinent pour décrire la manière dont les émotions, en s'entrelaçant aux structures interactionnelles et médiatiques, acquièrent leur force signifiante et mobilisatrice.

2.3 L'approche interactionnelle de Christian Plantin : les émotions comme bonnes raisons argumentatives

Dans le cadre de l'analyse du discours argumentatif, l'émotion ne se limite plus à un simple parasite de la rationalité, mais s'impose comme un acteur central et inséparable. Christian Plantin nous invite à repenser l'émotion comme une force vivante, façonnée dans le feu de la discussion, qui participe pleinement à la construction et à la légitimation des points de vue (Plantin, 2021). Loin d'être un vécu intérieur isolé, l'émotion se tisse dans les échanges, se négocie et s'exprime à travers mots, gestes et même images. Elle devient ainsi un véritable langage affectif, modulant et enrichissant la trame argumentative (Plantin, Polo, Lund, & Niccolai, 2013).

Plantin dresse une distinction capitale entre affect et émotion : le premier, emprunté à la psychanalyse, désigne une énergie psychique souvent enfouie et inconsciente, tandis que l'émotion se manifeste dans l'instant, visible et palpable, qu'elle soit verbale, corporelle ou numérique (Plantin, 2021). Cette double nature éclaire parfaitement comment l'émotion fonctionne à la fois comme ressenti personnel et phénomène social, enraciné dans la situation d'énonciation.

Pour décrypter cette complexité, Plantin (2020) propose la notion d'épisode émotionnel, une unité fine qui relie le contexte social, l'acte de langage, les réactions corporelles et la dynamique collective. Ce concept original distingue trois figures clés : L'expérimentateur, qui incarne et exprime l'émotion ; l'allocuteur, qui attribue ou commente une émotion, que ce soit pour soi-même ou pour autrui ; et l'orchestrateur, qui régule la tonalité émotionnelle collective en validant ou en censurant certaines expressions.

Avec l'émergence des environnements numériques où images, vidéos et textes s'entrelacent, ce prisme analytique permet de comprendre avec finesse comment ces émotions sont à la fois vécues et négociées collectivement.

Plantin (2021) met en avant quatre manières dont les émotions s'organisent dans le discours : le renforcement qui unit autour d'un accord, l'amplification qui exacerbe les affects, la contradiction qui ouvre sur le désaccord, et l'atténuation qui apaise les tensions. Cette dernière observation révèle combien la dynamique émotionnelle privilégie souvent la recherche d'un équilibre, évitant les affrontements frontaux au profit d'une gestion subtile des émotions au sein du débat.

Enfin, comme le développe Plantin (2011) et repris dans ses travaux plus récents (2020), l'émotion n'est pas un simple décor, mais un acteur stratégique et pleinement intégré : une « bonne raison » mêlant raison et sentiment, capable de persuader, de légitimer et d'orienter. Cette lecture interactionnelle s'avère particulièrement pertinente pour saisir les technodiscours où la vitesse et l'intensité des émotions créent des mémoires collectives et alimentent la mobilisation sociale.

Ainsi, loin d'être un simple ornement, l'émotion se révèle une force motrice, travaillée et utilisée dans le tissu même de l'argumentation, incarnant à la fois la richesse humaine et la puissance stratégique du discours.

3.Méthodologie et corpus

3.1 Méthodologie de recherche

Explorer les émotions qui circulent dans les replis numériques d'un fait divers revient à s'aventurer dans un espace où le texte et le pathos s'entrelacent à la vitesse d'un fil d'actualité. Notre terrain n'est pas un lieu physique mais une page Facebook, celle du média algérien *Tout sur l'Algérie* (TSA), où, le 25 mai 2025, une publication a déclenché un véritable séisme affectif. En quelques heures, l'annonce de la disparition inquiétante de Marwa, collégienne de douze ans à Constantine, a généré plus de deux mille deux cents mentions « J'aime », sept cent soixante-douze commentaires et neuf cent soixante et onze partages. Ce déferlement, loin de se réduire à un amas de chiffres, dessine les contours d'une mobilisation collective instantanée, à la fois spontanée et amplifiée par l'architecture algorithmique de la plateforme. C'est dans ce flux dense, presque torrentiel, que nous avons choisi de plonger, en prélevant vingt-cinq commentaires comme autant de fragments discursifs porteurs d'indices émotionnels, traces minuscules mais révélatrices d'un moment social condensé.

Le choix de TSA comme source de corpus n'est pas anodin. Média numérique à forte audience, TSA occupe une place structurante dans le paysage médiatique algérien, notamment via Facebook, où ses publications suscitent un haut degré d'interactivité. Facebook devient ainsi un espace d'étude privilégié pour analyser la circulation des émotions, à travers un format natif, le commentaire, où se mêlent indices pathémiques et dynamiques interactionnelles.

Pour la collecte des données, nous avons utilisé la capture d'écran comme outil, ce qui permet de figer le contenu dans son contexte visuel natif tout en conservant les éléments para- et non verbaux (émojis, typographie, ponctuation expressive). Conformément aux principes éthiques de la recherche en sciences sociales, nous avons préservé l'anonymat des internautes : toute information nominative ou visuelle permettant une identification directe ou indirecte a été supprimée ou floutée.

Dans cette optique, notre méthodologie croise trois perspectives théoriques majeures :

- L'approche écologique de Paveau (2017b), qui permet de situer l'émotion dans un écosystème technodiscursif structuré par les affordances du numérique (formats, émojis, technographismes) et la co-présence de signes verbaux et non verbaux.

- La typologie sémiodiscursive de Micheli (2014), qui propose de distinguer trois modalités d'expression émotionnelle : l'émotion dite (explicitement nommée), montrée (manifestée indirectement) et étayée (argumentée dans le discours).

- L'approche interactionnelle de Plantin (2011, 2021), qui envisage l'émotion comme une force dialogique mobilisée dans le débat pour renforcer ou contester une position.

Pour mettre en œuvre ces perspectives de manière opérationnelle, nous avons élaboré une grille d'analyse à la fois qualitative et typologique, articulée autour de cinq dimensions principales :

Dimension d'analyse	**Description**	**Approche théorique mobilisée**
Forme d'énonciation émotionnelle	Émotion dite, montrée ou étayée	Micheli (2014)
Type de technodiscours	Statut, commentaire discursif, commentaire métadiscursif, usage d'émojis, ou de technographismes	Paveau (2017b)
Fonction interactionnelle	Accord, contradiction, amplification, atténuation	Plantin (2021)
Rôle de l'énonciateur dans la séquence	Position du locuteur dans la séquence discursive où l'émotion est construite,	Plantin (2021)

émotionnelle	affichée ou discutée, en tant qu'expérimentateur, allocuteur ou orchestrateur *(Plantin, 2011, p. 208)*	
Cibles et objets de l'émotion	Individus, institutions, société, soi-même (auto-affect)	Micheli (2014); Plantin (2011, 2021)

Cette grille a été appliquée manuellement aux commentaires sélectionnés, en tenant compte du contexte discursif, de l'organisation séquentielle des échanges, ainsi que des signes para- et non verbaux (émoticônes, typographies, ponctuation expressive). Elle permet d'identifier à la fois la nature des affects exprimés et les dynamiques discursives qui organisent leur propagation dans l'espace numérique.

Cette méthodologie inductive, ancrée dans une lecture fine du corpus natif, vise à faire émerger les configurations affectives et interactionnelles propres aux techno-discours sur la disparition de Marwa. L'analyse qui suit exposera de manière détaillée ces résultats, en soulignant les régularités, tensions et singularités observées dans la mise en discours collective de l'émotion.

3.2 Illustrations du corpus

Cette section présente une sélection d'extraits du corpus, choisis pour leur portée expressive et leur valeur représentative. Chaque figure associe contexte et analyse sémio-discursive afin de montrer la diversité des formes émotionnelles et interactionnelles observées.

TSA - Tout sur l'Algérie
25 mai ·
Une collégienne de 12 ans a mystérieusement disparue à Constantine. Son père lance un appel à l'aide.
L'article complet dans le premier commentaire
TSA
Algérie : disparition mystérieuse d'une collégienne de 12 ans
2,2 K
772 commentaires 971 partages
J'aime
Commenter
Partager

Figure 1. Publication initiale de TSA annonçant la disparition de Marwa.

Contexte d'amorce de la mobilisation : technographisme affectif suscitant une réaction collective immédiate. Publication native multimodale mobilisant l'image et une formulation dramatique pour solliciter l'émotion partagée.

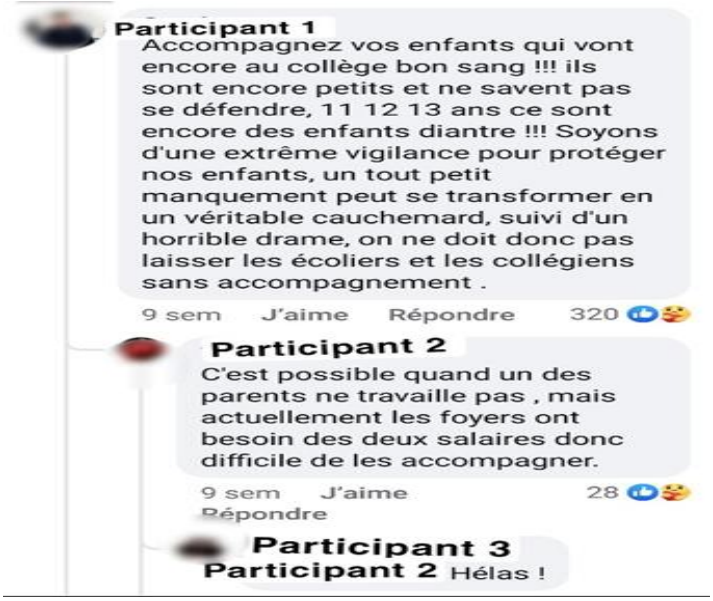

Participant 1
Accompagnez vos enfants qui vont encore au collège bon sang !!! ils sont encore petits et ne savent pas se défendre, 11 12 13 ans ce sont encore des enfants diantre !!! Soyons d'une extrême vigilance pour protéger nos enfants, un tout petit manquement peut se transformer en un véritable cauchemard, suivi d'un horrible drame, on ne doit donc pas laisser les écoliers et les collégiens sans accompagnement .
9 sem J'aime Répondre 320
Participant 2
C'est possible quand un des parents ne travaille pas , mais actuellement les foyers ont besoin des deux salaires donc difficile de les accompagner.
9 sem J'aime Répondre 28
Participant 3
Participant 2 Hélas !

Figure 2. Commentaire discursif sur la responsabilité parentale.
Construction émotionnelle d'une norme d'accompagnement parental, confrontée à des contraintes socio-économiques. Technographisme discursif amplifié par une ponctuation expressive et un lexique pathémique.

Partci4,
Anissa Karbachepour Les arabes c'est après 3 jours pour que la police en France et plus précisément à Marseille, prend ta déclaration de la disparition de ton fils ou de ta fille.
9 sem. J'aime Répondre Modifié 2
Partici5
Partici4 un enfant mineur en général c'est le même jour
9 sem. J'aime Répondre 2
Partci4 Cessez de dire des bêtises ,pour un mineur qu'il soit de n'importe quelle nationalité c'est immédiatement que l'on recherche ,il y a aussi un numéro de téléphone européen le 116 000 . On dit que le RN attise le racisme mais de l'autre côté également , avec de fausses déclarations comme la vôtre .
Répondre Modifié 2
Partci6
Partic4 ida vraiment n importe quoi!! Les disparitions de mineurs sont prises tout de suite, je suis bien placée pour le savoir !!!!
Partici7 Répondre 2
Partici4 a n'importe quoi peut importe où l'enfant est l'alerte est donné le même jour.
De tout cœur avec elle cette princesse et ca famille
9 sem. J'aime Répondre

Figure 3. Commentaires polémiques sur les délais de traitement des disparitions. Technographisme conflictuel issu d'un désaccord sur les pratiques policières en France. Argumentation polémique à forte dimension pathémique, marquée par une confrontation d'ethos (Paveau, 2017b ; Plantin, 2011).

Partici8
Partci1 uf son père a déjà confirmé qu'il l'accompagne toujours, juste l'administration à fessait une erreur de faire sortir les élèves avant l'heure prévue
9 sem. J'aime Répondre 10
Partici9
Partici8 elle a passé un examen du coup celui qui fini sort voilà
9 sem. J'aime Répondre 2
Partici10
Partici8 en ont rien à faire en Algérie l'école ouvre la porte et au revoir
9 sem. J'aime Répondre
Partici11 Ep Sakraoui
Partici8 voila hedi ghalta
9 sem. J'aime Répondre
Partici12
Partici10 ..C'est la responsabilité des parents pas celui de l'école..Nous sommes dans un monde devenu complètement tordu..
9 sem. J'aime Répondre
Partici10
Partici12 je sais pas mais l'école et le collège que j'ai fréquenté il y avait une surveillante à la porte qui vérifiait qu'on parte pas seule. C'est pas compliqué à mettre en place mais en Algérie les parents laissent les enfants partir seuls...
9 sem. J'aime Répondre
Partici13
Partici8 c est une faute très grave ; l administration doit assumer ses responsabilités .

Figure 4. Débat autour de la responsabilité institutionnelle et parentale. Interaction technodiscursive conflictuelle où se superposent un pathos de l'indignation et des discours d'expérience. Présence d'effets de contradiction et d'atténuation de l'information.

Partici14
Elle a été retrouvé
Parti15
Parti14 vp de partager des informations incrédible et croire les rumeurs, jusqu'à sent on a pas de nouvelles
Parti14
Parti15 Mes Fils je ne l'ai pas inventer, je l'ai su à travers une page,en tt les cas j'espère qu'elle sera retrouver très rapidement
Répondre à Maman De Mes Fils
Parti16
Parti14 fausse information tjrs disparue
Parti17
Ramdane
Parti14 arrête de dire des bêtises,
Parti18
Parti14 non pas encore malheureusement
Parti19
Partici14 tghaazlou

Figure 5. Rumeur, rectification et gestion collective de l'incertitude. Technographisme de circulation émotionnelle faible : à l'annonce d'une rumeur de retrouvaille, des démentis modérés s'enchaînent, révélant une tension entre espoir et vérification de l'information.

Parti20
Si Parti1 f quand je penses que tout le monde rieit at ss mequait de moi
lcrxque j oixaiinnapiais portout au coi iige aux cours particuiuas etc Puisse Allah protéger tous nos enfants et Puisse li protéger cette jeune fille inclssatah elle reviendra auprès de ses parents saine et seuve nous sommes de tout coeur avec son papa et sa maman
Parti21
Parti20 non madame vous avez entièrement raison je fait pare mes filles nous vivant dane une socléé de monstre
12
3
3
Parti22
Parti20 exactement nous aussi bravo Madame
Parti23
Parti20 Amineeeee. Ya Rab
Parti24
Parti1 ouais c est bon ils font mise à marier

Figure 6. Témoignage validant un comportement parental stigmatisé. Technographisme empathique en spirale dialogique. Le fil d'échanges met en scène une valorisation rétrospective du surinvestissement parental, converti en norme de vigilance

sur fond de solidarité émotionnelle.

Figure 7. Prières et émotions dans un message de soutien.
Technographisme pathémique à dominante spirituelle : message religieux d'espoir collectif exprimé dans une double modalité verbale et visuelle, renforcée par l'usage d'émojis et de sticker.

4. Analyse discursive des émotions

L'analyse des 25 commentaires issus de la publication Facebook de TSA révèle une forte densité émotionnelle articulée autour de trois axes majeurs : la vulnérabilité des enfants, la défaillance des institutions, et la solidarité collective. Ces dynamiques affectives, inscrites dans un environnement technodiscursif natif, activent des formes variées d'énonciation émotionnelle, de positionnements interactionnels et de mise en scène des émotions.

4. 1Typologie du technodiscours (Paveau)

Le corpus se compose exclusivement de commentaires natifs issus de Facebook, principalement au format texte, avec une intensité variable en termes de technographismes et de dispositifs expressifs. Selon Paveau (2017b), ces productions langagières relèvent du technodiscours, en ce qu'elles sont co-construites dans un environnement numérique spécifique, structuré par les affordances de la plateforme (formats de publication, typographies disponibles, ressources émotico-iconiques). La forme dominante dans le corpus est celle du commentaire discursif, c'est-à-dire un énoncé autonome exprimant un point de vue, une émotion ou une position, souvent étayé par une argumentation. Ainsi, le Participant 1 développe un commentaire structuré autour d'une injonction parentale : « Soyons d'une extrême vigilance pour protéger nos enfants, un tout petit manquement peut se transformer en un véritable

cauchemar (…) on ne doit donc pas laisser les écoliers et les collégiens sans accompagnement. » Ce commentaire illustre l'investissement du locuteur dans la sphère discursive émotionnelle, où la construction argumentative renforce la dimension affective de la prise de parole.

Commentaire métadiscursif
Certains énoncés adoptent une posture métadiscursive, interrogeant la validité ou la véracité de l'information circulante. Les échanges entre les Participants 14, 15 et 16 montrent un usage du commentaire comme régulation discursive : Participant 14 : « Eiie a été retrouvée » ; Participant 15 : « arrêtez svp de partager des informations incroyable [sic] et croire les rumeurs, jusqu'à présent on n'a pas de nouvelles » ; Participant 16 : « fausse information tjrs disparue [sic] ». Ces prises de position ne concernent pas uniquement l'objet émotionnel (la disparition), mais également le fonctionnement discursif lui-même. Elles relèvent d'un contrôle de l'énonciation, dans une logique de crédibilisation ou de disqualification, typique des technodiscours sociaux.

Technographismes et expressivité émotionnelle
La présence de technographismes (capitalisation emphatique, ponctuation redondante, émojis) vient densifier l'expression émotionnelle. Le Participant 1 utilise plusieurs marques typographiques comme « bon sang !!! », « diantre !!! », qui soulignent une panique contenue dans une esthétique oralisée et exclamative. De son côté, le Participant 25 déploie un registre visuel fort : « Ke dieu [sic] la protege [sic] et la rend à sa famille saint [sic] et sauf 😭😭😭😭😭😭😭 ☹️💔💔 ». Cet énoncé se situe à la frontière du commentaire techno-iconique, croisant texte et technographismes dans une logique d'hyperaffect, amplifiée par la représentation visuelle d'une prière à travers un sticker animé de type GIF (Tenor), accompagnée du mot « aamiin » stylisé.

Iconotexte émotionnel
L'intégration du sticker animé dans le commentaire du Participant 25 relève d'un iconotexte : un énoncé hybride combinant texte et image dans une unité discursive affective. Ce dispositif marque une extension multimodale de la parole émotionnelle en ligne et matérialise l'affect non seulement à travers les mots, mais aussi par l'image dynamique et culturellement située du rituel religieux partagé. Cette co-présence de signes relève pleinement de l'écologie discursive décrite par Paveau (2017b), où les technologies modifient les modes de production et de réception du sens.

4.2 Formes d'énonciation émotionnelle (Micheli)

Les émotions dans le corpus se déploient selon les trois modalités établies par Micheli (2014) : émotion dite, émotion montrée et émotion étayée.

L'émotion dite correspond à une mise en mots explicite du ressenti ou à son intensification par des procédés linguistiques. Ainsi, le Participant 1 alerte : « Accompagnez vos enfants qui vont encore au collège bon sang !!! », puis insiste sur leur fragilité : « Ils sont encore petits et ne savent pas se défendre. » L'usage d'exclamations réitérées et d'expressions emphatiques (« bon sang », « diantre », « véritable cauchemar », « horrible drame ») signale une verbalisation directe de la peur et de l'indignation. De manière analogue, le Participant 21 dénonce : « On vit dans une société de monstre [sic]. » Ces énoncés condensent une émotion dite, marquée lexicalement et syntaxiquement, portée par un jugement

normatif.

L'émotion montrée se manifeste dans les éléments para- ou technodiscursifs tels que les émojis, la typographie expressive ou les ponctuations affectives. Par exemple, le Participant 8 clôt son commentaire par : « Voilà hedi ghalta ☹ », où l'émoji triste renforce la désolation suscitée par l'erreur administrative évoquée. Le Participant 25 publie une prière : « Ke dieu [sic] la protège et la rend à sa famille saint [sic] et sauf 😇😇😇😇😇😇😇 ☹💔💔 », combinant une formulation religieuse à une série d'émojis de supplication et de douleur, traduisant visuellement une tension affective intense. Enfin, des expressions telles que « Hélas ! » (Participant 3) ou « Non pas encore, malheureusement. » (Participant 18), bien que lexicalement sobres, expriment implicitement une tristesse partagée et activent une pathémisation douce du discours.

L'émotion étayée se rencontre dans les propos développés, où l'affect est intégré dans une argumentation ou un récit personnel. Le Participant 20 offre un témoignage fort : « Quand je pense que tout le monde riait et se moquait de moi lorsque j'accompagnais partout au collège (…) je suis de tout cœur avec son papa et sa maman. » Cette posture allie justification personnelle et solidarité collective, dans une logique d'étayage émotionnel où l'affect est mis en récit, légitimé et projeté vers autrui. Le Participant 12 mobilise également une stratégie argumentative : « Je ne sais pas mais l'école et le collège que j'ai fréquenté il y avait un surveillant à la porte (…) ce n'est pas compliqué à mettre en place mais en Algérie les parents laissent les enfants partir seuls. » Ici, la frustration est ancrée dans une critique raisonnée du dysfonctionnement institutionnel, intégrant l'affect à une rhétorique de réforme.

Cette pluralité d'énonciation émotionnelle révèle une **écologie discursive** propre aux technodiscours natifs, où le dire affectif cohabite avec le montrer et le démontrer, contribuant à une mise en scène polymorphe et multimodale de l'émotion.

4. 3 Analyse interactionnelle et pragmatique de l'émotion (Plantin)

4.3.1 Fonctions interactionnelles

Les commentaires observés dans le corpus s'organisent selon une logique d'interaction pathémique, où l'émotion est non seulement exprimée, mais aussi modulée par les prises de parole successives. Selon Plantin (2021), ces interactions affectives prennent des formes variées : amplification, accord, contradiction ou atténuation. Elles participent à la construction collective du sens et à la circulation des affects dans un environnement dialogique ouvert.

L'amplification se manifeste par des commentaires venant renforcer ou prolonger l'émotion initialement exprimée. Ainsi, le Participant 20, qui évoque sa propre expérience de stigmatisation liée à la protection de ses enfants, reçoit une série de réponses solidaires : Participant 21 : « Non madame, vous avez entièrement raison. » ; Participant 22 : « Exactement, nous aussi. Bravo Madame. » ; Participant 23 : « Amineeee. Ya Rab 🤲🤲🤲 ». Ces réactions valident l'émotion initiale, renforcent la légitimité du témoignage et intensifient l'adhésion collective à une norme protectrice. Elles traduisent un mécanisme de solidarité normative, typique des mobilisations affectives en ligne.

La contradiction intervient lorsque des informations, des interprétations ou des valeurs sont contestées. L'affirmation du Participant 14 : « Eiie a été retrouvée » est

immédiatement remise en cause par plusieurs internautes : Participant 15 : « Arrêtez svp de partager des informations incroyable [sic] et croire les rumeurs. » ; Participant 16 : « Fausse information, toujours disparue. » ; Participant 17 : « Arrêtez de dire des bêtises. ». Cette séquence illustre un processus de vérification collective dans l'urgence émotionnelle, où l'incrédulité, la colère et la prudence se superposent dans un effort de maîtrise du pathos.

La tension et opposition idéologique apparaît dans l'échange suivant : le Participant 4 affirme : « Les arabes, c'est après trois jours pour que la police en France (…) prenne la déclaration. » Ce propos est immédiatement critiqué par d'autres internautes : Participant 5 : « Un enfant mineur, en général, c'est le même jour. » ; Participant 6 : « C'est vraiment du n'importe quoi ! Les disparitions de mineurs sont prises tout de suite. » ; Participant 7 : « N'importe quoi, peu importe où l'enfant est, l'alerte est donnée le même jour. » Cette séquence témoigne d'une polarisation argumentative : certains mobilisent un discours de discrimination institutionnelle fondé sur l'appartenance ethnique, tandis que d'autres corrigent ce discours par l'appel à la norme juridique ou au vécu personnel. L'émotion s'accompagne ici d'un enjeu de vérité et de légitimité morale.

L'atténuation se produit lorsque certaines interventions, bien que critiques, adoptent un ton modéré et visent à réduire la tension. Ainsi, le Participant 15, face aux rumeurs circulantes, précise : « Je ne l'ai pas inventé, je l'ai su à travers une page (…) j'espère qu'elle sera retrouvée très rapidement. » Ce type de commentaire évite la confrontation directe tout en exprimant une forme de regret ou de prudence. Il participe à une régulation émotionnelle par la nuance, essentielle dans les dynamiques interactionnelles complexes.

Ainsi, les fonctions interactionnelles mises en évidence révèlent une configuration affective dialogique, où les internautes s'engagent dans un jeu de validation, de critique ou d'amplification des émotions d'autrui. Loin d'être accessoires, ces fonctions structurent la mise en discours collective de l'émotion dans l'espace public numérique.

4.3.2 Rôle des énonciateurs dans la séquence émotionnelle

L'analyse du corpus révèle trois postures principales : expérimentateur, allocuteur et orchestrateur (Plantin, 2011, 2021), rôles ni exclusifs ni stables mais évolutifs selon les dynamiques affectives. L'expérimentateur parle depuis un vécu émotionnel direct. Le Participant 20 déclare : « Quand je pense que tout le monde riait et se moquait de moi lorsque j'accompagnais partout au collège aux cours particuliers… », une parole incarnée et vulnérable fondée sur la mémoire et l'injustice vécue. L'allocuteur adopte une posture adressée vers le collectif, souvent prescriptive. Le Participant 1 interpelle : « Accompagnez vos enfants qui vont encore au collège bon sang !!! (…) on ne doit donc pas laisser les écoliers et les collégiens sans accompagnement. », transformant sa peur et son indignation en norme d'action sociale. L'orchestrateur régule les émotions collectives dans les situations de tension et de désinformation, à l'image du Participant 6 : « C'est vraiment du n'importe quoi !! Les disparitions de mineurs sont prises tout de suite, je suis bien placée pour le savoir !!!! », qui conteste les propos du Participant 4 et réoriente le débat vers des faits, tout en exprimant colère et indignation.

4.3.3 Cibles et objets de l'émotion

Les émotions exprimées dans le corpus se cristallisent autour de quatre grandes cibles, chacune portant une charge affective spécifique. Les enfants apparaissent comme les principales figures de l'émotion protectrice. Le Participant 1 insiste : « Ils sont encore petits et ne savent pas se défendre », exprimant une peur parentale et un sentiment d'urgence face à leur vulnérabilité. Les institutions scolaires et administratives sont fréquemment dénoncées. Le Participant 12 critique : « Ce n'est pas compliqué à mettre en place mais en Algérie les parents laissent les enfants partir seuls », suggérant un dysfonctionnement systémique et une responsabilité partagée dans la mise en danger. La société dans son ensemble est parfois désignée comme une entité pathogène. Le Participant 21 résume ce rejet par une formule lapidaire : « On vit dans une société de monstre [sic] », manifestant une indignation morale face à la déshumanisation perçue. Enfin, soi-même peut être la cible d'un auto-affect, comme en témoigne le Participant 20 : « Tout le monde riait et se moquait de moi (…) mais je suis de tout cœur avec son papa et sa maman ». Ce commentaire exprime un sentiment d'injustice personnelle tout en reconfigurant une solidarité avec les parents de Marwa.

Ces objets émotionnels traduisent une reconfiguration collective des normes de protection et de responsabilité, révélant comment un événement tragique réactive et redistribue les affects dans l'espace public numérique.

Discussion des résultats :

L'étude des commentaires autour de la disparition de la petite Marwa révèle que l'émotion qui s'y déploie n'est pas individuelle ni immédiate, car elle se construit collectivement à travers les formes d'expression et d'interaction propres aux plateformes numériques. Ces prises de parole tissent ensemble sens, normes et émotions, et les technodiscours natifs deviennent des lieux où l'on négocie et recompose ce que ressentir veut dire dans un espace partagé. Autrement dit, les technodiscours natifs fonctionnent comme des scènes où s'articulent et se recomposent ensemble émotion et discours.

Un noyau fort de cette construction est constitué par un pathos parental centré sur la fragilité des enfants. Cette émotion partagée, nourrie par l'image de l'innocence menacée, donne lieu à un registre discursif hybride où exhortations, injonctions et témoignages se mêlent pour produire des discours à la fois insistants et engagés. Le commentaire du Participant 1, oscillant entre alerte poussée et appel à la vigilance, illustre la tension entre ce qui est dit comme émotion explicite et ce qui se devine comme exigence morale. Ce n'est pas simplement une émotion exprimée, car elle est investie et mobilisée pour peser sur la réalité sociale, ce qui entraîne une moralisation par le ressenti.

Parallèlement, une dimension critique s'affirme avec clarté. En effet, beaucoup d'internautes adoptent une posture de dénonciation à l'égard des institutions scolaires, des forces de l'ordre ou de la société en général. Ces interventions ne relèvent pas d'une simple réaction émotionnelle, puisqu'elles portent un jugement et forgent une prise de position normative. L'indignation, la colère ou la désillusion deviennent ainsi des raisons argumentatives. Comme le montrent les travaux de Plantin (2021), les émotions fonctionnent ici comme de « bonnes raisons » qui structurent et légitiment une critique. La multiplicité des positions énonciatives, qu'elles soient assumées par des expérimentateurs, des allocuteurs ou des orchestrateurs, révèle un discours numérique profondément polyphonique, et chacune de ces postures joue un rôle dans la façon dont le débat se construit, se reçoit et transforme les émotions. Ce tissage collectif de

l'émotion s'inscrit dans ce que Paveau (2017b) conceptualise comme une écologie discursive, car les interactions, les technologies et les pratiques langagières se répondent et s'engendrent mutuellement.

Enfin, ce que l'on pourrait réduire à de simples effets de style, comme les émojis, les majuscules ou la ponctuation marquée, fonctionne en réalité comme des ressources sémiotiques puissantes. Ces technographismes structurent le rythme, l'intensité et la visibilité de l'émotion, et ils ne se contentent pas de décorer puisqu'ils façonnent véritablement le discours. À travers eux, on voit se jouer une sémiodiscursivité émotionnelle (Micheli, 2014), où l'émotion prend forme à l'intersection du verbal, du visuel et de l'interaction.

Au total, les commentaires constituent une co-construction émotionnelle et normative. La disparition de Marwa, loin de rester un fait isolé, devient le point de départ d'une narration collective où se mêlent peur, responsabilité partagée et solidarité. C'est dans la tension entre l'émotion individuelle et sa résonance communautaire que se déploie aujourd'hui la puissance mobilisatrice des technodiscours émotionnels.

Conclusion

L'analyse des commentaires autour de la disparition de Marwa révèle une construction collective et médiée de l'émotion, ancrée dans les architectures technodiscursives du web social. L'émotion, loin d'être une simple réaction isolée, se déploie selon des modalités interdépendantes, c'est-à-dire dire, montrer et étayer, et circule dans un espace polyphonique où s'entrecroisent mobilisation normative, régulation dialogique et jugement critique. Le pathos parental, la défiance institutionnelle et la solidarité s'articulent pour produire une narration émotionnelle qui oriente, interpelle et redéfinit les normes de protection et de responsabilité. Les postures énonciatives (expérimentateurs, allocuteurs, orchestrateurs) et les technographismes incarnent cette dynamique, car ils légitiment les émotions, en renforcent l'intensité et en augmentent la visibilité. La disparition de Marwa joue ici le rôle de déclencheur discursif, ce qui fait se rencontrer peur, critique sociale et lien solidaire pour générer une dynamique émotionnelle collective propre aux technodiscours contemporains (Paveau, 2017b ; Plantin, 2021 ; Micheli, 2014).

Ce travail ouvre plusieurs pistes pour prolonger l'analyse : suivre dans le temps la genèse et la recomposition des émotions entre immédiateté et persistance ; comparer leur déploiement sur d'autres plateformes aux affordances techniques différentes (X/Twitter, Instagram, TikTok) ; examiner la réception, c'est-à-dire la manière dont ces discours émotionnels sont perçus, relayés ou contestés par des acteurs externes (médias, autorités, communautés), afin d'en mesurer l'influence sur la normalisation et la mobilisation ; intégrer une dimension sociocognitive (identités sociales, croyances préexistantes, schémas de défiance) pour saisir les conditions en amont de l'émergence émotionnelle ; et enfin, interroger le rôle des algorithmes de visibilité et des dispositifs de modération, en confrontant ce cas à d'autres crises discursives, afin de distinguer invariants et spécificités contextuelles. En combinant description fine, typologie des énonciations et ouverture réflexive, cette étude montre comment, dans les espaces numériques natifs, l'émotion devient vecteur de sens, levier d'action et mécanisme de régulation sociale en contexte de crise.

Conflict of Interest

The author declares no known financial or personal conflicts of interest that could have influenced the research, analysis, or conclusions presented in this paper.

Références

1. Micheli, R. (2013). Les émotions : Des modes de sémiotisation aux fonctions discursives. *Semen. Revue de sémio-linguistique*, (32), 79-99. https://journals.openedition.org/semen/9790
2. Micheli, R. (2014). *Les émotions dans les discours : Modèle d'analyse, perspectives empiriques*. Bruxelles : De Boeck Supérieur.
3. Micheli, R. (2015). Esquisse d'une typologie des différents modes de sémiotisation verbale de l'émotion. *Semen*, (39). https://doi.org/10.4000/semen.9795
4. Paveau, M.-A. (2016). Des discours et des liens : Hypertextualité, technodiscursivité, écrilecture. *Semen*, (42), 23-48. https://doi.org/10.4000/semen.10609
5. Paveau, M.-A. (2017a). Pratiques discursives et interactionnelles en contexte numérique : Questionnements linguistiques. *Langage et société*, 160-161(2), 199-215. https://doi.org/10.3917/ls.160.0199
6. Paveau, M.-A. (2017b). *L'analyse du discours numérique*. Paris : Hermès-Lavoisier.
7. Plantin, C. (2011). *Les bonnes raisons des émotions : Principes et méthode pour l'étude du discours émotionné*. Berne : Peter Lang. https://doi.org/10.3726/978-3-0352-0070-6
8. Plantin, C., Polo, C., Lund, K., & Niccolai, G. (2013). Quand construire une position émotionnelle, c'est choisir une conclusion argumentative : Le cas d'un café-débat sur l'eau potable au Mexique. *Semen*, (35), 41-64. https://journals.openedition.org/semen/9800
9. Plantin, C. (2020). Une méthode d'approche de l'émotion dans le discours et les interactions. *SHS Web of Conferences*, 81, 01001. https://doi.org/10.1051/shsconf/20208101001
10. Plantin, C. (2021). *Dictionnaire de l'argumentation*. Lyon : Institut Charles-Augustin de Rhétorique (ICAR). https://icar.cnrs.fr/dicoplantin/dictionnaire-l-texte/

References

1. Micheli, R. (2013). Emotions: From Modes of Semiotization to Discursive Functions. Semen. Journal of Semio-Linguistics, (32), 79-99. https://journals.openedition.org/semen/9790
2. Micheli, R. (2014). Emotions in Discourses: Analytical Model, Empirical Perspectives. Brussels: De Boeck Supérieur.
2. Micheli, R. (2015). Outline of a Typology of Different Modes of Verbal Semiotization of Emotion. Semen, (39). https://doi.org/10.4000/semen.9795
3. Paveau, M.-A. (2016). Discourses and Links: Hypertextuality, Technodiscursivity, Writing. Semen, (42), 23-48. https://doi.org/10.4000/semen.10609
4. Paveau, M.-A. (2017a). Discursive and Interactional Practices in a Digital Context: Linguistic Questions. Language and Society, 160-161(2), 199-215. https://doi.org/10.3917/ls.160.0199
5. Paveau, M.-A. (2017b). Digital Discourse Analysis. Paris: Hermès Lavoisier.

6. Plantin, C. (2011). Good Reasons for Emotions: Principles and Methods for the Study of Emotional Discourse. Bern: Peter Lang. https://doi.org/10.3726/978-3-0352-0070-6
7. Plantin, C., Polo, C., Lund, K., and Niccolai, G. (2013). When Constructing an Emotional Position Means Choosing an Argumentative Conclusion: The Case of a Drinking Water Debate Café in Mexico. Semen, (35), 41-64. https://journals.openedition.org/semen/9800
8. Plantin, C. (2020). A Method for Approaching Emotion in Discourse and Interactions. SHS Web of Conferences, 81, 01001. https://doi.org/10.1051/shsconf/20208101001
9. Plantin, C. (2021). Dictionary of Argumentation. Lyon: Charles Augustin Institute of Rhetoric (ICAR). https://icar.cnrs**.fr/dicoplantin/dictionnaire-l-texte/**

RESEARCH ARTICLE

Reference and ideology of the image (a study of some applied model)

Maameri Faouaz

Dr.
Faculty of Arabic Language, Literature, and Arts, Hadj Lakhdar University
Batna 1, Algeria, Laboratory affiliation: Poetry Laboratory
Email: faouaz.maameri@univ-batna.dz ; Orcid: 0009-0001-3213-3242

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Image; Rference; Ideology; Connotation; form; Symbol; Recipient.

Abstract

This article seeks to reveal the ideologies and references that images carry, on the one hand, and the extent of their contribution to the process of social communication, on the other. This image has become the most open space that highlights various ideologies and cultures, shedding light on their characteristics and customs without restriction or condition. This research aims to study the dimensions of images, their ideologies, and the backgrounds underlying them, shedding light on their connotations and values, and the cultural, social, and psychological legacies they carry. These images serve as a reference point that brings together a group of manifestations that form meanings and connotations with ideological dimensions and connotations.

Citation. Faouaz M. (2025). Reference and ideology of the image (a study of some applied model). *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 229–236. https://doi.org/10.56352/sei/8.11.7

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 01.01.2025 | Accepted: 12.05.2025 | Published: 27.08.2025 (available online)

1. Introduction:

Today, the image plays a significant and fundamental role in our daily lives. Indeed, we live in an age of images, parallel to the age of words. In light of rapid development, it has become one of the most widespread and influential means of communication and media in many societies. Today's reality confirms that this is the age of the image, as the development of its tools and the capabilities of its production and product have contributed to its ease of access to the recipient, who now prefers and loves viewing it more than written texts. Given that the recipient is more likely to believe and believe in images, seeing them with their own eyes, communicating or consolidating a particular ideology or thought may be more effective using carefully selected images that radically impact the description of an event, its objectivity, and its credibility. The term "image" has been used with all kinds of connotations. For example, if we examine the various expressions of the word "image," we find that it has multiple and varying meanings depending on the era and date. Therefore, the image has a connection to taste and art, possessing a magical and semantic dimension, evident in the meanings and connotations that the image symbolizes and refers to. The image was another important form of communication and propaganda, playing a significant role in embodying meanings, ideas, and feelings. This is achieved through the cultural, social, and psychological heritage it carries within it, serving as a reference point for a group of manifestations that form the meanings and connotations of that image. Hence, the production of the image was based on a set of ideologies and references, whether religious, social, political, or cultural. These references subsequently produce and provide us with various forms and symbols that confront us with the problem of visual language, a visual language

developed through the mechanisms of reading and its diversity. This is what made it occupy a significant and important position in the field of semiotics; it became an alluring tool that works to attract, stimulate, and influence the recipient's mind. So, what is the concept of ideology? What are the ideological backgrounds that the image presents to us?

2. The Concept of Ideology:

The term ideology has attracted the attention of many researchers and scholars in the field of humanities and social studies, due to the multiplicity of intellectual trends witnessed in the humanities during the nineteenth century. These trends have shaped different and diverse ideologies used according to the context for which they were created. Perhaps one of the most important definitions in this vein is that of Antoine de Tracy, [1]who defined it as "the total system of ideas, beliefs, and general tendencies underlying certain behavioral patterns. They help explain the moral foundations of actual action and serve to guide it." Tracy considers ideology to be the science of ideas, or the science that studies the validity or falsity of the ideas held by people. These ideas are the basis for constructing theories and hypotheses that are compatible with the mental processes of members of society. The goal of this science was to "serve the desired goal through means that conceal objective truth from the subject who believes in it."[2]

3. The ideological backgrounds that the image presents to us:

The image constitutes a cognitive carrier and a reference through which the sender transmits his intentions and meanings. It is not merely a painting in which the artist redraws features, or a mere process of transfer. There are many meanings that the creator adds to his work, through the multiple connotations that the image refers to. Therefore, the researcher finds within the folds of the image that it consists of two basic aspects: the present aspect that is expressed through linguistic expression and the formation of the image within the artwork, and another aspect, which is the absent aspect to which the work in our hands refers us. In light of this connection, photography is established and formed as “a process of adjusting the apparent existence and the inner existence, and making these worlds perceived by sense, intuition, and reason.”[3] On this basis, the image was the visual language through which a totality of meanings was generated, based on a set of data provided by iconic representation as a visual production of natural objects, on the one hand, and data from elements that are neither natural nor living, on the other hand. This concerns what is called the plastic representation of human conditions, i.e., the plastic sign that "replaces reality, possesses the ability to affirm abstract objects, and makes the world legible."[4]

The image was a mixture of sensation and feeling, this process that occurs in the subconscious world voluntarily or involuntarily; because its owners are able to blend reason and emotion, and thus they are able to depict and imagine reality, so their language was "filled with symbols and characters, its words do not carry abstract meanings, but rather carry eye-catching ghosts of similes, metaphors and metaphors. The function of simile is to depict and clarify by moving from one thing to something similar to it, and through it the poet or writer expresses a meaning in himself, and the more distant and strange it is, the more wonderful and beautiful it is."[5] Thus, the artistic image worked to develop the artwork, and convey its special meaning on the one hand, and to perceive the truths that ordinary language is unable to perceive and communicate on the other hand.

The artistic image is the writer's comprehensive psychological experience, which addresses the senses and moves away from the direct depiction of reality, moves our imagination, and brings together contradictions and divergences, such that the function of one image cannot be separated from another in the text; because the experience is the complex connection between a group of visions, images, ideas and emotions on the one hand, and the way of expressing them on the other hand. Critics and rhetoricians, ancient and modern, have agreed that suggestion has the strongest effect on the soul, the greatest impact on it, and the strongest connection to it.[6]

3.1 Language Reference and Ideology:

This aspect lies in the meaning and all the words and sentences written on the image. These may be direct or indirect, but in the long term and cumulatively represent an ideological orientation that reflects the values, ideas, and beliefs of the communicator.

It is noteworthy that the author's name, "Mouloud Faroun," is written above the main title, "Ibn al-Faqir," in small black font. This color, considered a dark color, is important because it significantly contributes to conveying the message between the writer and the recipient. The font and color in this image significantly contribute to converging the meaning and concept, on the one hand, and to "conveying the idea and strengthening the psychological impact on the recipient," [7]on the other. However, what draws attention to the author's name is the word "Faraoun." Is this his real name, or was this name given to him?

Anyone who examines the name Pharaoh will find that it is not the surname of Mouloud, but was given to him by the French authorities, while his original name was Shaaban.

As for the novel's title, "Son of the Poor," which is the main title of the novel, it is written in bold, bold script at the top of the page of the image, in a distinctive dark red color that makes the text more prominent, as if it were outside the space of the image. This makes it occupy a dominant space within the image. Thus, the title becomes a stimulus that captures the eye and guides it to identify the subject.

The dark red color is also used in the title of the image to express the state and situation of the character of Son of the Poor, and the suffering experienced by the Algerian people during that historical era, on the one hand, and to arouse the reader's feelings and inflame their emotions, on the other. The title works to stimulate the reader's mind by evoking some of the historical events experienced by Algerian society, especially the poor class, a class that suffered injustice and deprivation at the hands of the French colonizers. These are the main titles in the image. As for the subtitles, we find the phrase: New Translation: Dr. Abdul Razzaq Obaid. It is written directly below the main title, and is written in small letters, slightly smaller than the letters used to write the author's name and the title. We also notice at the bottom of the image the address of the publishing house, which is: Dar Talantiqit. It is written in bold black letters to indicate the identity of the entity that published this book, for the purposes of marketing and advertising.

Hence, the titles written on the image are highly connected and cohesive due to the importance they give to knowing and understanding the connotations of the image, as it has a semantic load "semiological"[8] that carries within it moral, social and ideological values. Therefore, we find that many titles attract and entice readers to continue the reading process, and put them in a state of interaction with these texts through dialogue, discussion and understanding their internal content (see Figure 01).

Anyone contemplating this image will notice the word "tyrant" prominently and clearly appearing on the cover, forming a visual mark from which the sender's message emanated, turning it into a title that carries several questions and a set of connotations and codes. The word "tyrant" in this context is the predicate of a deleted

subject, which is understood to be: "he is the tyrant." But the question that arises here is, why was the subject deleted and the predicate left in the title? Was its deletion merely a deletion and nothing else? Or did the deletion of the subject have a purpose and meaning?

The basic principle of subject and predicate is "confirmation, but grammarians have permitted the deletion of one while the other remains when there is a clue indicating the deleted word." [9]The purpose of deleting the subject in this context is brevity on the one hand, and to stimulate the recipient's mind on the other. We also find that the word "tyrant" is written in a bold, bold script with strong, equal letters. [10]This script is called "ruq'ah" in Arabic, "the easiest of Arabic scripts, and was given this name because people in ancient times used to write it on scraps of paper. The singular is ruq'ah, with a damma on the "ra." Returning to the cover, we find the author's name, Muhammad Ghamri, written in a thin Persian script below the title. What is also noticeable in the title and author's name is the predominance of the color black, which is considered one of the dark colors that denote mystery and rebellion. It reflects frightening depth and mysterious secrets. Its importance is evident in this chapter, as it contributes significantly to sending the message between the writer and the recipient. Perhaps the color black for the word "tyrant" refers to and symbolizes the character of the Roman Caesar Nero.

Hence, we find that the lines and colors in this image significantly contribute to conveying the meaning and concept through their impact on the recipient's psyche. It's clear that the title adds aesthetic and artistic value to the image, giving it an ideological dimension.

3.2 The Ideology of Formation (Image):

Images are considered a form of expression and communication. They have had a clear influence on humans since ancient times, as evidenced by the drawings and figures found on walls and caves, as well as the statues erected during that period. They were shaped in a historically older era than oral discourse and written texts, and are more deeply rooted and embedded in the subconscious, memory, imagination, and mind. They are associated with the eye, the mirror, and rituals. In this sense, images emerged in the Middle Ages with Christianity, and the history of images became the history of religion. They played a significant missionary role, propagating beliefs and revitalizing the message of faith. However, images subsequently acquired greater social, economic, and political dynamism than words and ideas, transforming into a means of political communication with the masses, a force for material production, and a space for economic investment, profit-making, and wealth accumulation. However, the intersection of the history of photography and the history of technology has brought about a major digital revolution that has transformed humanity from a mere interest in image-making to the age of the screen. This revolution has broken down barriers and opened the doors wide to the tremendous development of images and the resulting radical change in people's lives, transforming them into a visual space exposed to the public, and in their way of seeing the world and each other. This has also engendered confusion in the status of traditional culture, heritage, and customs. In the current era, the image has become one of the most important means of clarification and explanation. "It is therefore neither the product of purely emotional nor purely rational labor; for art is the essence of civilizational endeavor, and civilization is not based on emotion alone, nor on reason alone, but rather the product of the fusion of the two together in the crucible of the creative human being."

The figure of the father, who takes up a large space on the cover, symbolizes the Algerian rural father, wearing a burnous on his back and a gauze wrapped around his head, taking up a large space on the cover. His image appears clearly and distinctly, carrying connotations, due to the importance it occupies in depicting movements and postures that express different meanings and connotations. In this image, it was easy to "move from the signifier to the signified, and from the drawn form to the expressed truth." [11]Beside the father, we find the son, who represents the poor child who suffers the hardships of existence, living with a calm and content soul. The image in this scene reflects the state of the Algerian child, and the deprivation and hunger he suffers. Signs of poverty and need appear on him, especially in the outward appearance of his clothes, which are torn and old, indicating the extent of the suffering of this group. Add to that what the child is holding in his hand, represented by a piece of bread, a condition that indicates the decline of social conditions. These shapes were merely a

depiction of reality, or a symbolic representation of it, embodying the idea and theme of the event; that is, they point to the harsh social conditions experienced by the Algerian family during that historical period. The image of the house on this cover also appears to us in its old form, its bright, shiny yellow color, a result of time and use. It was built with rock and clay bricks mixed with straw. The roof is a mixture of hollow bricks and reeds, and its floor is rammed and covered with a layer of smooth yellow lime, which suggests a simple, rural impression.

Through this approach, we can say that these shapes and drawings embraced human ideas and experiences represented in a set of beliefs. These ideas were indirectly personified by the image, presented to the viewer for re-analysis and reading. The reader of the image finds themselves surrounded by a diverse and diverse culture, containing a set of ideologies and connotations. This is what the cover of this image represents:

Anyone who follows this image will find that it contains a set of symbols and shapes, including:

1/ The head: The shape of the head occupies a large space, due to its importance in depicting movements and postures that express various meanings and connotations. "The image has devoted great attention to focusing on the head area, perhaps because gravity is more prominent in the head than in other areas of the body.[12]" The head is clearly depicted in this cover, appearing clearly and distinctly, carrying within it various connotations and expressions. To further understand these connotations and symbols, we examine the head from the following aspects:

- Face: The face is used as a means and a symbolic language - non-verbal - that symbolizes and expresses the emotions and feelings hidden within the soul that its owner wants to communicate to others. Therefore, it is one of the main tools that create "movements, obfuscation, and covering up the hidden conscience within the soul. It includes the eyes, lips, eyebrows, forehead, forehead, head, hair, nose, and mouth, all in an attempt to reveal fabricated meanings that the soul hides.[13]" Knowing how to read and interpret subtle facial expressions is an essential part of understanding non-verbal behavior and reading people.

The facial movements in this image reveal a state of anger and the ability to cause harm on the one hand, and the type of feelings and emotions underlying this person on the other. Hence, "the bodily signals we give off reveal the truth; since it is impossible to match the body's gestures and signs, studying the face and its gestures is an art in itself."[14]

From this statement, it appears that the face is a tool that reveals hidden meanings and connotations, such as hatred, anger, sadness, fear, and depression. Many gestures and connotations are not conveyed verbally except through facial expressions, which are the most expressive part of the communication and understanding process that takes place between sender and receiver.

- Eye movement: What is noticeable about the eye movement in the picture is that it attracts attention, and is characterized by intensity and hatred, raging towards others, showing hostility and malice, expressing the extent of

the arrogance and haughtiness of its owner. It also appears through this look that its owner is not open to dialogue and discussion, and aims behind it to arouse anxiety and fear in others, especially those who oppose his policy and are not with him in his party. Therefore, we find that the eye in this picture played a strategic role in conveying meanings and signals to others, as it was a translator of what is in the soul through the gateway of the soul or heart, as it foretells what a person's conscience and feelings are. The poet says:

The eye reveals what is in the heart of its owner, whether it is hatred or love. The hated one has an eye that believes it. He cannot conceal what is in the heart.[15]

In these two verses, the poet refers to "the role played by the eye in expressing what is going on in the depths of its owner[16]".

The eyes represent the emotional and psychological state of the character, which appears through the image as a result of internal conflicts and repressions. Many philosophers and critics have spoken about the psychological dimension, including Freud, who established the theory of repression: "Which he traces back originally to the conflict between two opposing desires. This conflict occurs in the conscious area, and ends with the psyche ruling in favor of one of the desires and abandoning the other. This is what makes the psyche harmed by the conflict, so it experiences repression, and thus the desire moves from the conscious area to the unconscious."[17]

Through this theory, Freud believes that the feeling of repression within the psyche generates two conflicting desires, one of which manifests as apathy. These feelings are primarily manifested in the protagonist, who has experienced several internal psychological conflicts.

This feeling is what is known in psychology as "repression," which later manifests itself in various forms. As we note, the repression within him, stemming from a past event, continues to affect him, manifesting in his loss of desire to live.

This feeling, in turn, also creates another feeling within him: the absurdity of existence for him and for the world. Life no longer has meaning except through domination and control over others.

From this, we understand that the eye plays a significant role in the communication process, and this visual contact makes the relationship between the sender and the receiver increasingly clear. The meanings and symbols conveyed by the eye to the receiver, such as anger, sadness, happiness, etc., become more clear, understandable, and expressive.

2/ The Sword: In ancient times, the sword was of great importance to its users, whether Arab or non-Arab. It held a special place among fighters, as it symbolized strength and courage, and they excelled in its use. There is the Arab sword, the Roman sword, the Japanese sword, etc. The sword in this form takes up a large area, as it is centered in the sheath, appearing long, a feature that distinguishes the Roman sword. It was famous throughout Europe for its use in major battles and wars. It also indicates the policy pursued by Caesar Nero in managing government and the affairs of the people, represented by the use of violence and force, and even murder, against anyone who opposed his policy and opinion. This is what actually happened, as he killed those closest to him, as a result of opposition to his actions and behavior (his mother - his wife Octavia - his second wife Poppies - his teacher Seneca).

3/ Persecution: Christians were persecuted by ten Caesars, who subjected them to all kinds of torture. The persecution that Christianity was subjected to by Nero is considered the largest and most brutal. Its circumstances date back to the year 64 AD, when a horrific fire broke out in Rome, destroying half of it. The flames devoured large parts, and thousands of residents perished. Fingers of accusation pointed to Nero, indicating that he was the perpetrator. He needed a scapegoat, but found no one before him but the Christians, so he pinned the blame on them and began torturing and burning them with fire in front of the Roman people. This is what the cover image shows, as it shows men hanging on wooden boards in the shape of a cross. This cross symbolizes Christianity. The tragedy reached its peak at night in the imperial gardens when the Christians were set on fire after being oiled and nailed to pine poles.

Conclusion:

We can draw from the above a set of conclusions, including:

- The image is the essence of the visual arts. Although some arts require words and sound to express certain things, the image created a new language that captured the energy of sight, capturing the mind and imagination. This evolved into an interaction that was invisible to the image and unconscious to the human being, changing life around the world, crossing borders, and revealing many truths.
- The image is the meeting place of the arts and the threshold upon which the recipient stands before engaging in a work of art. It has witnessed several artistic transformations in the modern era and had a significant impact on the creation of new concepts across all cultural, social, political, and even economic activities. It has been a translation of many of the psychological and social states experienced by individuals amidst these ideological and cultural conflicts, in order to survive and continue in life, to search for self, and to find a better reality for the human soul.
- Man has transformed the image from an idol to art, transforming it into a successful channel of communication. Technological development has led to the control of images and has formulated a new theory of governance that replaces physical coercion with the control of public opinion through the control of image transmission. The captivating image has become a fascinator for naive eyes and empowers symbolic regimes to impose their control over the masses. Images have become a tool of control and an ideology of domination, alongside the power of money.
- The image represents a vessel for ideology. The aesthetic, musical, and linguistic momentum inherent in a literary text is itself ideological. The aesthetic aspect is ultimately an expression of a particular intellectual position, and ideological concepts exist within the realm of linguistic expression and are governed by its logic. Language is a tool for control as much as it is a tool for communication. Therefore, linguistic forms allow for the transmission of meaning and its ideological shaping.

Acknowledgment

The author would like to express sincere gratitude to the Faculty of Arabic Language, Literature, and Arts at Hadj Lakhdar University, Batna 1, for providing academic support and a stimulating research environment. Special thanks are also extended to the Poetry Laboratory for fostering scholarly dialogue that enriched the preparation of this study.

Conflict of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

References

1. Ibrahim, Z. (n.d.). The problem of philosophy. Library of Egypt.
2. Laroui, A. (2003). The concept of ideology (7th ed.). Arab Cultural Center.
3. Assaf, S. S. (1989). The image and its models in Abu Nuwas's creativity. University Institution for Studies and Publishing.
4. Al-Awkali, S. (2003, December). Image and reality. Al-Muqtataf: Libyan Magazine, (32).
5. Subh, A. (1995). The artistic construction of the literary image in poetry (2nd ed.). Al-Azhar Library for Heritage.
6. Tahir, A. M. (2002). The genius of image and place: Expression – interpretation – criticism. Dar Al-Shorouk for Distribution and Publishing.
7. Hamdawi, J. (1997). Semiotics and titling. Ilm Al-Fikr Magazine, 35(3), 99.
8. Qalati, I. (2012). The story of the Arabs: A book on grammar and morphology for all educational levels (1st ed.). Dar Al-Huda for Printing, Publishing and Distribution.
9. Mahmoud, M. A.-S. (1994). Teach yourself Arabic calligraphy (1st ed.). Ibn Sina Library for Printing, Publishing, and Distribution.

10. Adam, B. (2007). Instant visual recognition and its relationship to perceptual speed. Damascus Journal, 3(2), 412.
11. Arar, M. A. (2007). The statement without a tongue (1st ed.). Dar Al-Kotob Al-Ilmiyah.
12. Al-Baladhuri, A. b. Y. J. (n.d.). Genealogies of the nobles (Vol. 1; M. Hamidullah, Ed., 3rd ed.). Dar al-Maarif.
13. Al-Nouri, M. J. (2017). Body language (Kinetics) (1st ed.). Dar Al-Kotob Al-Ilmiyah.
14. Bouqandil, F. (n.d.). The psychological trend in the Arab novel. Lectures in the Course of Modern and Contemporary Arab Narratives.

Footnotes:

[1]Zakaria Ibrahim, The Problem of Philosophy, Library of Egypt, Egypt, n.d., n.d., p. 176.
[2]Abdallah Laroui, The Concept of Ideology, Arab Cultural Center, Beirut, Casablanca, 7th ed., 2003, p. 23.
[3]Sassine Simon Assaf, The Image and Its Models in Abu Nuwas's Creativity, University Institution for Studies and Publishing, Lebanon, 1st ed., 1989, p. 20.
[4]Salem Al-Awkali, Image and Reality, Libyan Magazine, Al-Muqtataf, Issue 32, December 2003.
[5]Ali Subh: The Artistic Construction of the Literary Image in Poetry, Al-Azhar Library for Heritage, Cairo, 2nd ed., 1995, p. 32.
Ali Subh: The Artistic Construction of the Literary Image in Poetry, Al-Azhar Library for Heritage, Cairo, 2nd ed., 1995, p. 32.[6]
[7]Abdul Muslim Tahir, The Genius of Image and Place - Expression - Interpretation - Criticism, Dar Al-Shorouk for Distribution and Publishing, Amman, 1st ed., 2002, p. 48.
[8]Jamil Hamdawi, Semiotics and Titling, Ilm Al-Fikr Magazine, Kuwait, Vol. 35, No. 3, 1997, p. 99.
[9]Ibrahim Qalati, The Story of the Arabs - A Book on Grammar and Morphology for All Educational Levels, Dar Al-Huda for Printing, Publishing and Distribution, Algeria, 1st ed., 2012, p. 28.
[10]Mahdi Al-Sayed Mahmoud, Teach Yourself Arabic Calligraphy, Ibn Sina Library for Printing, Publishing, and Distribution, 1st ed., 1994, p. 80.
[11]Basmaa Adam, Instant Visual Recognition and Its Relationship to Perceptual Speed, Damascus Journal, Vol. 3, No. 2, 2007, p. 412.
[12]Obaida Subti - Najib Bakhoush, the same reference, p. 78.
[13]Mahdi Asaad Arar, The Statement Without a Tongue, Dar Al-Kotob Al-Ilmiyah, Beirut, Lebanon, 1st ed., 2007, p. 34.
[14]Mahdi Asaad Araar, the same reference, p. 46.
[15]Ahmad bin Yahya Jabir al-Baladhuri, Genealogies of the Nobles, Vol. 1, Ed. Muhammad Hamidullah, 3rd ed., Dar al-Maarif, Cairo, n.d., p. 513.
[16]Muhammad Jawadi Al-Nouri, Body Language (Kinetics), Dar Al-Kotob Al-Ilmiyah, Beirut, Lebanon, 1st ed., 2017, p. 170.
[17]Fawzia Bouqandil: The Psychological Trend in the Arab Novel, Lectures in the Course of Modern and Contemporary Arab Narratives, Lecture, p. 5.

RESEARCH ARTICLE

Artificial Intelligence and Legislative Quality: Enhancing Legal Drafting, Simplifying Legal Language, and Addressing Ethical and Accountability Challenges

Khaldi Omar
Dr.
Abu Bakr Belkaid University, Tlemcen
Algera
Email: khaldi.omar@univ-tlemcen.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Artificial intelligence, legislation, legal drafting, quality of law, legal language, machine translation, legislative simplification.

Abstract

The rapid advancement of artificial intelligence (AI) has created transformative opportunities for the legal field, particularly in legislative drafting and interpretation. This study examines the role of AI in enhancing the quality of legislation through advanced analytical tools capable of processing vast bodies of legal data, detecting inconsistencies, predicting legislative impacts, and identifying regulatory gaps. Furthermore, AI contributes to simplifying the language of law by supporting clearer drafting processes, improving legal translation, and enabling the development of virtual legal assistants that can make legislation more accessible to citizens.

Despite these benefits, the integration of AI in legislative processes raises significant legal and ethical challenges. Concerns regarding accountability, algorithmic bias, intellectual property rights, and the transparency of automated decision-making remain unresolved. These challenges highlight the need for careful governance frameworks that balance innovation with principles of fairness, privacy, and data protection.

Ultimately, this study argues that AI holds the potential to improve legislative clarity and societal inclusivity by producing laws that are not only technically precise but also comprehensible to the general public. By fostering greater awareness of rights and obligations, AI can contribute to building more transparent, efficient, and citizen-centered legal systems.

Citation. Omar Kh., (2025). Artificial Intelligence and Legislative Quality: Enhancing Legal Drafting, Simplifying Legal Language, and Addressing Ethical and Accountability Challenges. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 237–251. https://doi.org/10.56352/sei/8.11.16

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 25.04.2025 | Accepted: 01.07.2025 | Published: 29.08.2025 (available online)

Introduction:

In light of rapid technological developments around the world, artificial intelligence has become one of the most important technical tools affecting many aspects of social life. The law is one of the areas touched by this change, with artificial intelligence techniques now being used to support the legal process at various stages: from preparing bills to reviewing and drafting them, and finally interpreting and simplifying them for those affected by them.Using artificial intelligence is a critical tool for improving the quality of laws in terms of internal coherence, linguistic accuracy, and clarity, as well as making them more accessible to individuals, which helps to enhance the principle of legal security and increase confidence in the legislative system.

Due to its complexity and technical structure, legal language often constitutes an obstacle for citizens when it comes to understanding legal texts. This has a negative effect on the effectiveness of these laws and the degree to which individuals adhere to them. From this standpoint, artificial intelligence appears to be an effective tool for simplifying the drafting of legal texts and facilitating access to their content through linguistic and lexical text

analysis tools, including rewriting legal materials in an easy-to-understand manner without compromising their accuracy or legal basis.

This research clarifies the impact of modern technologies on legislative development, emphasising the urgent need to make legal language more accessible and promote the right to legal knowledge for the general public. It also demonstrates artificial intelligence's ability to address the challenges associated with the quality of legal drafting.

This study aims to explore ways in which AI can enhance the quality of legislation. It also seeks to examine tools that use artificial intelligence to simplify and clarify legal language, evaluate their efficiency within legal systems, define the limits of their application and offer practical suggestions for integrating artificial intelligence into the legislative process.

The research hypothesises that the quality of legal texts can be improved and rates of ambiguity and repetition reduced through the use of artificial intelligence. By simplifying legal language, individuals can more easily understand their rights and obligations, including those relating to social life, access to justice, and the integration of AI technologies into the legislative process. Achieving these objectives requires a more flexible and up-to-date legal environment.

Previous studies have varied in their research into the relationship between artificial intelligence and the law. Some studies have examined the judicial use of artificial intelligence, such as in digital justice, while others have focused on the use of artificial intelligence mechanisms in smart contracts or legal assistance. However, very few of these studies have focused on improving the quality of legislation or simplifying legal language through artificial intelligence. Therefore, the limited existing research justifies the urgent need to address this gap through this study.

Based on the above, the following problem can be raised:

To what extent can artificial intelligence improve the quality of legislation and make the language of the law more accessible, while maintaining accuracy and legal reliability?

To answer this question, we took a descriptive analytical approach, examining relevant legal and technical literature and analysing the experiences of other countries that have started using artificial intelligence in legislation. We divided this study into two topics:

The first topic is: The conceptual framework of artificial intelligence; the quality of legislation; and the language of the law.

The second topic: The role of artificial intelligence in improving the quality of legislation, simplifying legal language, and the challenges it faces.

The first topic: The conceptual framework of artificial intelligence, the quality of legislation, and the language of the law.

Artificial intelligence has recently become relevant to many fields, such as the economy, trade, the media and scientific research. However, perhaps the field of law has not yet adopted artificial intelligence to the same extent as other fields. Artificial intelligence can be exploited in several ways in the field of legal sciences, including improving the quality of legislation and facilitating the language of the law so that individuals can understand various legal texts. To understand this subject, it is necessary to define artificial intelligence and its types and tools, and then to learn about the quality of legislation and legal language.

The first step is to define artificial intelligence and its various forms.

The modern world has experienced a revolution in information technology, which has spread to all fields, including medicine, engineering, economics, and scientific research. The most prominent development in this

progress is the emergence of technologies that rely on data analysis and simulate the human mind, or artificial intelligence. These technologies help solve complex problems.

Section one: Definition of artificial intelligence

Artificial intelligence (AI) is the simulation of human cognitive functions such as understanding language, thinking and problem-solving, as well as the ability to make decisions. Systems with artificial intelligence exhibit behaviours similar to human logical thinking, as well as the ability to learn from experience and perform tasks independently. Artificial intelligence relies on algorithms and tools that aim to complement or compensate for human work through a set of technologies that simulate human intelligence. Thus, artificial intelligence becomes both a method and a form of technological progress.[1]

Artificial intelligence is one of the most transformative technologies of the modern era. It's also one of the most rapid technology disruptions ever. The term artificial intelligence originated in 1956 at a scientific conference at Dartmouth College. One of the founding pioneers of artificial intelligence, Marvin Minsky[2], described it as "the science of making machines do things that require intelligence if done by men."

It is clear that artificial intelligence is a modern technology based on analysing data presented to it. It is a simulation of the human mind and is sometimes superior to humans in terms of accuracy and speed of results. Perhaps the most notable applications of artificial intelligence are ChatGPT, the renowned Chinese website Deepseek and the Grok tool, to name a few. Thus, artificial intelligence has become software that simulates activities such as learning, inference, and perception. However, AI is constantly developing, with scientists having developed systems that exceed human ability to learn and think about any topic.

The most significant aspect of AI is its ability to analyse data and take actions that increase the likelihood of achieving a specific goal. Machine learning is a subfield of AI that enables software to learn from new information without human intervention. Methods of deep learning, such as those applied to texts, images, and videos, will aid automatic forms of learning that revise large volumes of unstructured data.[3]

The scope of artificial intelligence is to understand cognitive skills using computational models that represent them, and to create machine intelligence that can perform human tasks more efficiently.

Section Two : Types of Artificial Intelligence

Thanks to recent advances in artificial intelligence research, we are getting closer to having smart, conscious devices. These are machines that can understand spoken commands and recognise images. There are different types of artificial intelligence, which are classified according to ability or purpose. In this study, we will only explain the types of artificial intelligence classified according to their purpose, of which there are four:

Interactive artificial intelligence:

[1] Moumita Ghosh and Thirugnanam Arunachalam, 'Introduction to Artificial Intelligence' in Srinivasa K G and others (eds), Artificial Intelligence for Information Management: A Healthcare Perspective (mai 2021) 23 <https://doi.org/10.1007/978-981-16-0415-7_2 > accessed 5 February 2025

[2] Marvin Minsky (August 9, 1927 in New York, USA — January 24, 2016 in Boston, Massachusetts) was an American mathematician and computer scientist, and one of the best-known practitioners of artificial intelligence (AI). Minsky won the AM race in 1969. The Turing Award , the highest honor in computer science, for his pioneering work in the field of artificial intelligence.

[3] Ahmed Ibrahim Hassan Ali , "The Future of Higher Education in Light of Artificial Intelligence - Global Innovation Index 2022 and Iraq's Location therein " (2025) 4(1) (S. J .E .D) 1,6

This type is considered the oldest and simplest, as its systems are limited to interaction only, with no ability to form memories or learn from previous experiences when making decisions. IBM's Deep Blue chess software is a perfect example of this category.[1]

Therefore, this intelligence relies on identifying the available pieces, anticipating possible moves and selecting the best one. Therefore, we can see how effective interactive systems are at performing basic functions by reading and responding to stimuli.

2- **Artificial intelligence with limited memory:**

It can store data and information, as well as predictions based on previous information. This enables machines with limited memory to use historical data in decision-making processes. Examples include study robots, instant messaging apps and virtual assistants on smartphones.[2]

3- Theory of Mind-based Artificial Intelligence:

This genre is highly sophisticated, not only simulating the real world, but also interacting with it and understanding the individuals, creatures and objects within it. It recognises that each entity has feelings and emotions that affect them. This is important for the development of societies, as it enables AI systems to understand human feelings and behaviours, allowing them to interact accordingly.[3]

4- Self-conscious AI:

Despite their lack of presence on the ground, machines in this genre have self-awareness and special feelings, making them more intelligent than humans. Many countries are competing for access to this cutting-edge technology, as it is the focus of competition in this area.

The second requirement: Defining the quality of legislation and simplifying the language of the law

Like any act of the authorities, laws must be based on sound reasoning and future studies must be aimed at achieving clear and specific objectives. This is why it is important to measure the impact of laws and assess their quality, in order to understand how effective the legal text is at addressing the issues it was developed to tackle. The quality of laws and the clarity of their language are essential for the effectiveness and legitimacy of the legal system. Legislative texts are not merely written statements; they are means that can be used and understood to achieve the required objectives at the lowest possible social and economic cost.

Section one : What is meant by the quality of legislation

The quality of legislation is considered an effective means of measuring and analysing the impact of new legislation. This can be achieved by considering the views of experts and conducting surveys of citizens, as well as understanding the potential impact on those involved in the legislative process. Ultimately, parliament makes the decision and determines the final version of the legislation. The methodology for measuring the quality of legislation dates back to the mid-1970s in the United States, where it was initially used to assess the effects of inflation. It has since been adopted by countries such as Finland and Canada as a structured method that includes a cost-benefit analysis. The United Kingdom began using the measurement of legislative impact in the

[1] Kawthar Mansel, "*The Role of E-Governance in Algeria: Towards the Emergence of a Law for E-Governance*" (PHD thesis , University, 8 May1945 Guelma, Algeria 2023) 482.
[2] Omar Abbas Khudair Al-Obaidi, *Contemporary Applications of Crimes Caused by Artificial Intelligence: Legal Study in the Perspective of International Law* (Arab Center for Publishing and Distribution, Cairo, Egypt, 2022) 46
[3] S Preethi , "A Survey on Artificial Intelligence"(2020) 3(2) (IJICT) 39,41

mid-1980s. By the second half of the 1990s, this methodology had become popular, with around half of the EU's members adopting the legislative quality standard by 1996.[1]

The concept of quality in law relates to three main aspects: the form, content and function or purpose of the law. Jurists have found that formal and substantive integrity alone is insufficient to ensure the quality of legislation. Instead, the law must emphasise its intended function, centred on achieving social stability, ensuring justice and equality, protecting rights and freedoms, facilitating the investigation of social progress, and ensuring legal security. All of these factors contribute to the pursuit of the public interest.

We can say that the quality of laws indicates how well legal texts achieve their objectives efficiently and effectively. To ensure easy implementation and justice, we must also take into account clarity, accuracy, and compatibility with other laws.

The quality of legislation refers to how effectively it is prepared. This quality is measured by a number of factors, the most important of which is studying the effects and possible consequences of its application. It also involves anticipating the results and discussing possible implementation alternatives. The quality of legislation index is one of the World Bank's indicators, measuring legislators' ability to prepare high-quality policies and laws. Legislative quality is divided into two aspects: the first relates to the legislative policy itself and its outcomes, while the second mainly relates to the quality of legislative drafting.[2]

Therefore, it can be said that the quality of legislation is one of the most important things that legislators seek when drafting laws, in order to achieve their goals and ensure legal security. This can only be achieved by using mechanisms such as clarity, accuracy, compatibility and consistency, and by ensuring that legislation does not conflict with existing state or international laws. Legislators must also be familiar with all issues related to legislation.

Section Two : What is meant by the language of the law

Everyone has their own way of expressing themselves, and it is widely accepted that the law has its own unique methods that can only be mastered or understood by those who study it. The first reading of any legislation makes this clear, as it uses specialised language that may or may not convey meaning. The law is certainly considered both a science and an art, requiring legislators to devise legal rules using the available methods.[3]

It cannot be ignored that drafting legislation requires accuracy, specialisation and intelligence. The legal sciences stem from the social sciences relating to reality. However, legislators must achieve the goals set at the heart of the legal rules they write. This can only be achieved if the legal rules are clear and unambiguous, facilitating their application and thus achieving their purpose.

This goal is achieved through effective legal drafting. While it is true that legal language is generally difficult to understand, this does not mean that it is complex to apply. It is simply a specialised language that includes a mixture of words, some of which are taken from everyday language and contain synonyms that the general public understands. These words are transformed into a specialised language that conveys precise and specific meanings that are not open to interpretation and are only understood by specialists. Therefore, it is considered a language that expresses accurate concepts in a specific scientific field or discipline.[4]

---

[1] Karim Sayed Abdul Razzaq," Methodology for Measuring the Impact of Legislation among International Practices and Experiences and the Requirements of Application in the Arab Countries"(2018) 3(6) (Scientific Journal of the Faculty of Economic Studies and Political Sciences) 41 ,50

[2] Miloud Hammami , " Quality of Legislation Making and Drafting" (2023) 37 (2) (Annals of the University of Algiers 1) 191,201

[3] Fatima Nassakh , "Legal Language in Algerian Legislation between Persistence and Oscillation "(2019) 4 (33) (Annals of the University of Algiers)81, 83

[4] Zahra Abdel Baqi, "*Problematic Translationof the Terminology of the Algerian Nationality Law*", (LLM thesis , Abu Bakr Belkaid University Tlemcen (2015) 19

Therefore, it can be said that legal language differs from other types of language and is sometimes shrouded in ambiguity, making it difficult for those addressed to understand its meaning. This is particularly true in the Algerian legal system, where texts are issued in French and then translated into Arabic. Consequently, the meaning of certain legal terms or vocabulary may differ from one law to another. It is therefore clear that there is a need to use artificial intelligence to simplify this language and make it more accessible to individuals. From this standpoint, the law can be better understood by non-specialists, increasing trust and transparency in the legal system and reducing judicial disputes resulting from a misunderstanding of the law, thus improving voluntary compliance with it.

The second topic: The role of artificial intelligence in improving the quality of legislation, simplifying the language of law, and the challenges it faces

Artificial intelligence is considered one of the most important aspects of digital transformation in the twenty-first century, as its applications have begun to expand into various fields, including law. In particular, it is being used to draft legislation and make legal language more accessible. Currently, artificial intelligence techniques can be used to analyse legal documents, predict the outcomes of legislation and suggest improvements to make legal formulas more accurate and clear. However, there are disadvantages and obstacles to achieving the desired and expected results.

The first requirement: The role of artificial intelligence in improving the quality of legislation and simplifying the language of the law

The difficulty of understanding legal language and the ambiguity of laws are challenges that hinder the achievement of justice and put pressure on the judicial system. Artificial intelligence offers innovative solutions to these issues.

Section I : The Role of Artificial Intelligence in Improving the Quality of Legislation

Thanks to rapid advances in artificial intelligence, the world is undergoing significant change in many respects. Notably, this change has not only affected technical and industrial fields, but also begun to impact other areas such as the drafting and simplification of laws. From there, artificial intelligence has tremendous potential to influence the preparation and implementation of legislation, resulting in more effective laws that achieve the greatest degree of justice and efficiency. AI may also improve the quality of legislation by employing key methods and approaches.

1-Big Data Analysis:

This involves collecting, organising and examining large amounts of information related to the law, such as judicial rulings, contracts and legal correspondence. Artificial intelligence, machine learning and deep learning techniques are then used to discover patterns, make predictions and gain insights.

AI techniques, especially machine learning, can quickly and accurately process this information, allowing patterns to be detected and gaps, inconsistencies, or repetitions in existing laws to be identified. This gives legislators important ideas for improving drafting and avoiding problems.

For example, in the future, systems could study how a particular law affects different groups in society based on previous data, which would make it easier to formulate fairer laws.[1]

Machine learning algorithms are well-known for their ability to repeatedly build useful models of complex phenomena by detecting patterns and inferring rules from data. This feature enables legislators to use machine learning technology to filter large quantities of documents and data contrary to the Constitution, for example,

[1] Kevin D Ashley, *Artificial Intelligence and Legal Analytics: New Tools for Law Practice in the Digital Age* , (Cambridge University Press 2017) 234

and identify the most effective ones. This saves time on tasks that likely require high-level legal skills, making legislative work more effective and efficient.

This technology is significant because it can accomplish a number of objectives, chief among them being the enhancement of the process of reaching the best legal conclusion. It can also assist in forecasting the results of various cases. As well as supporting litigation strategies, this tool can be used to evaluate the conduct of judges and attorneys. These technologies save time and effort by quickly processing large amounts of data. They also help to detect gaps in laws and regulations and address them. The more that lawmakers use this technology, the better the laws will be, as they will be free of loopholes and inconsistencies. This technology can also predict potential conflicts and their consequences based on previous data.

1- Drafting and Amending Legal Document

Advanced natural language processing technologies [1] (NLP) can contribute to the preparation of initial drafts of laws, clauses or amendments. By studying available legal texts and extracting linguistic and legal patterns, artificial intelligence can generate accurate and consistent formulations, reducing the risk of human error and saving time. These tools can also review texts to ensure that they are free from ambiguities, contradictions and grammatical or spelling errors that could lead to inaccurate interpretations.

AI can be used to improve efficiency and save time. Tools such as ChatGPT, Copilot, Claude, Harvey, Ironclad and Luminance allow you to create contractual drafts in minutes rather than hours. These tools can also reduce errors by detecting linguistic and grammatical errors early on, making it easier to make modifications and unify legal language to avoid conflicts.

2- Predictive Analytics of Legislative Impact:

One of the key functions of artificial intelligence is its ability to predict the potential outcomes of new legislation before it is enacted. Using sophisticated simulation models, AI can analyse the impact of new laws on the economy, society, the environment and specific areas. Legislators can use these predictions to make informed decisions and amend laws to minimise negative impacts and maximise positive benefits. For instance, the effect of a new tax law on employment or investment ratios could be determined.

Artificial intelligence relies on models that simulate previous data, such as previously implemented laws, to predict the outcomes of new legislation in areas such as elections, the media, and criminal law. These models act as digital twins of communities, helping legislators to understand the effects of different legal options in real time before they are approved. AI tools can also scan legal texts to automatically match them to applicable local or global laws and immediately highlight issues such as inconsistencies with international treaties. Additionally, AI tools analyse legislators' behaviour and voting patterns, accurately predicting the results of deputy voting. Systems such as the "Political Actor Agent" use LLMs to simulate legislative behaviour and interpret voting decisions in a way that is clear and understandable to humans.[2]

The UAE's Regulatory Intelligence Office has set up a government unit that uses artificial intelligence to monitor the impact of laws and suggest regular updates, speeding up the legislative process by up to 70%. The UAE was the first country to use AI to help draft new legislation and review and amend existing laws. [3]

---

[1] Natural language processing (NLP) is a branch of artificial intelligence which enables computers to understand, generate and process human language. NLP can interrogate data using natural language, whether text or sound. It is also referred to as 'language'. Most consumers may interact with natural language processing without realising it. For example, it is the core technology behind virtual assistants such as Oracle Digital Assistant (ODA), Siri, Cortana and Alexa.

[2] Hao Li, Ruoyuan Gong, Hao Jiang . "Political Actor Agent: Simulating Legislative System for Roll Call Votes Prediction with Large Language Models "(dec 2024) < https://arxiv.org/abs/2412.07144> accessed 10 February 2025

[3] Chloe Cornish, "UAE set to use AI to write laws in world first published "(Apr 20 2025) ,< https://www.ft.com/content/9019cd51-2b55-4175-81a6-eafcf28609c3 > accessed 22 apr 2025

3- Compliance Monitoring and Enforcement

The function of artificial intelligence extends beyond drafting to include monitoring compliance with and application of current laws. Smart systems can track transactions, activities or actions to ensure compliance with laws and regulations. This is particularly important in areas such as anti-money laundering, financial market regulation, and information protection, where large volumes of data need to be monitored.

4- Identifying Legislative Gaps:

Artificial intelligence can examine legal texts and legislative precedents to identify areas with a lack of legal regulation or inconsistent laws. This technology enables legislators to determine priorities in advance and identify legislative gaps. AI can also identify legal gaps in areas not covered by the law. It can discover duplicates or differences between legal texts and distinguish between similar legislation and laws. By identifying these gaps, they can be addressed through jurisprudence. AI can also compare a country's laws with those of similar countries to identify areas not regulated by local laws but regulated by other legal systems. This helps legislators to propose new legal articles or amend existing ones.

Section Two : The Role of Artificial Intelligence in Simplifying the Language of the Law

It is noteworthy that some legal texts are not devoid of complexity, and thus there is a need for technologies that can simplify these texts to make them clearer for non-specialists. From this standpoint, artificial intelligence emerges as an effective solution to this problem, removing the linguistic and cognitive barriers that prevent understanding of different legal texts and enhancing transparency and access to justice.

Legal language suffers from structural and technical deficiencies, making it less accurate and harder to understand than ordinary English. This deficiency is mainly due to the incorrect use of language by many legal professionals, including incorrect spelling and punctuation. Professional culture also contributes to the spread of ambiguous and grandiose expressions by relying on complex phrases that do not always lead to effective and clear communication.[1]

Legal formulations often tend to be repetitive and use excessively long words instead of the most accurate ones, which causes confusion for the reader and reduces the clarity of the text. While lawyers themselves often struggle to read and understand legal texts, the situation is further complicated for non-specialists, particularly in China.

One reason for the complexity of legal language may be the long grammatical structures and complex or sometimes ambiguous sentences, as well as the Latin words and old terms that have only recently been amended. For example, the General Administrative Conditions Book, which applies to public works contracts, is a prime example of this. It was issued in 1964 and remained in force until the new conditions book was issued in 2021. The old law contained terms that were no longer in circulation at the beginning of the millennium, as well as references to legal centres that no longer exist. This makes it difficult for non-specialists to access justice. Legal texts for non-students may be difficult to understand, forcing people to consult specialists or lawyers for advice, which costs money. Therefore, it is clear that artificial intelligence tools are needed to simplify legal language.

1. Analysis and understanding of legal texts:

Artificial intelligence systems that use natural language processing are particularly effective at analysing large amounts of legal text. These systems can identify basic legal concepts, extract technical terms and understand the links between different paragraphs and articles. For instance, deep learning algorithms can learn the exact legal meanings of terms by analysing millions of legal documents, which helps to clarify them.

[1]David Mellinkoff , " the language OF the Law" (1964) 63(1) (michigan law review)180,182

They can also reveal complexity and ambiguity. AI can identify long and complex sentences and unclear legal terms that may confuse the average reader.

They can also classify and compile data. Legal documents are classified based on their content and information related to a specific topic is compiled, making it easier for people to find what they need and presenting it in simpler language.

2. Machine translation and simplification of wording

The most important feature of artificial intelligence-based translation tools is that they effectively convey the meaning of legal texts, which often contain complex terms that are difficult for the general public to understand. These tools can transform such texts into simpler language while maintaining the necessary legal accuracy. This technique is not limited to translating between languages; it also simplifies legal texts within a language, making it more effective in this regard.

Large Language Models (LLMs): Like GPT-4, they can paraphrase complex legal paragraphs in a simplified, understandable manner while preserving the original legal meaning.

These models demonstrate their ability to simplify complex legal paragraphs by reformulating sentences without altering the legal meaning. They can also explain legal terms in plain language to non-specialists while maintaining the required accuracy in the legal context. This is important because laws are usually written in difficult or technical language, making them hard for people to understand. This affects people's ability to recognise their rights and responsibilities.

As an example, we mention what is stipulated in Article 144 bis 2.[1] When it is reformulated by the LLM model such as GPT-4, the wording becomes "Jinn shall be punished for a period ranging from two to five years and a fine of up to half a million dinars for anyone who infringes in any way on the Prophet Muhammad, peace be upon him, or other prophets , or ridicules the well-known and basic teachings of Islam through speech, writing, drawings, or any other means.

Through this formulation, we can see how the language has been simplified while retaining the fundamental meaning. Some terms, such as those from the field of religion, have necessarily been clarified, and the method has been changed so that it is clear to readers who are not specialists in law.

It can also generate executive summaries: Artificial intelligence can produce short summaries of long legal texts, helping individuals and companies identify the main points without reading the entire document.

3. Create virtual paralegals (Chatbots)

AI-powered legal aid is an interactive way to facilitate understanding of the law. These chatbots can respond to users' questions in simple language, provide general legal advice, and direct users to the appropriate legal resources.

They provide immediate information and people can ask questions in their own language and receive accurate, easy-to-understand responses based on original legal texts, without having to understand difficult terminology.

They can also explain legal concepts. These robots can clarify difficult legal concepts by presenting real-life examples or situations through microdirectives. This model transforms general legislative goals into specific,

[1]Algeria, Law No 01-09 of 26 June 2001 amending the Penal Code, Official Gazette of the People's Democratic Republic of Algeria, No 39 (27 June 2001), art 144 bis 2: "Anyone who offends the Prophet (peace be upon him) or the rest of the prophets or mocks what is known of the religion necessarily or any ritual of Islam, whether through writing, drawing, declaration or any other means, shall be punished by imprisonment from three (3) years to five (5) years and a fine from 50,000 DZD to 100,000 DZD, or one of those two penalties only."

situation-based executive orders, communicating via smart systems and sophisticated technologies. Traffic laws are a good example of this concept, with general rules being replaced by flexible directives that suit actual conditions. These guidelines help to increase compliance with the law by simplifying complex standards into easy-to-follow instructions, thereby improving the efficiency and flexibility of the legal system.[1]

One of the most prominent artificial tools in the legal field is the robot lawyer, an AI program that performs legal tasks traditionally undertaken by human lawyers. This type of lawyer has recently emerged and works under the supervision of a human lawyer, assisting with legal research, electronic discovery and contracting. This helps people to manage legal and administrative matters easily and effectively. However, the problem of determining who will be responsible for errors, malpractice or other damages caused by autonomous robot lawyers remains.[2]

The advantages of using legal chatbots include simplifying legal language by rephrasing information in a way that the average person can understand, and increasing access to justice. Citizens who cannot afford to hire a lawyer can access a free initial consultation, which helps to relieve pressure on judicial institutions by filtering out simple enquiries and ensuring that cases requiring human intervention are dealt with accordingly. Virtual assistants are also available 24/7 and never tire.

The second requirement: Legal and ethical challenges

Using artificial intelligence to improve the quality of laws and simplify legal language could increase the effectiveness and efficiency of legal systems. However, this application raises a number of legal and ethical issues that must be thoroughly examined to ensure these technologies are used responsibly and fairly.

Section one : Legal Challenges and Concerns

Although artificial intelligence provides many services in the field of law, such as improving the quality of legislation and simplifying legal language, this area is not without its challenges.

1. Legitimacy of AI-assisted law-making processes

Contrary to some people's belief in the perfection of artificial intelligence systems, practical experiments have shown that artificial intelligence, whether in the form of algorithms or self-operating intelligent systems, is not error-free. Additionally, there are privacy and security issues because these systems' algorithms rely on sensors to collect large amounts of information. Furthermore, AI can commit errors and infractions that amount to crimes.

Current artificial intelligence excels at tasks requiring clear patterns and specific or semi-specific structures, but faces significant challenges with conceptual or intangible issues, matters requiring human values, judgements, or an understanding of social and political conditions. Given these limitations, it is evident that the processes involved in drafting legislation, which require abstract thinking, value analysis and policymaking, currently surpass the capabilities of artificial intelligence. [3]

2-The problem of intelligence accountability and the ambiguity of legal adaptation

The question of accountability for decisions or outcomes resulting from AI is a complex legal issue. When mistakes or unacceptable results occur, who should be held accountable? Should it be the developer of the artificial intelligence, the user, or the system itself? Ultimate power and responsibility for decisions must remain with humans to ensure respect for human values and legal expertise.

---

[1] Anthony J. Casey ," The Death of Rules and Standards" (2017) 92 (4) (maurer shcool of law indiana law journal) 1401,1410

[2] Michael Loy , "Legal liability for artificially intelligent “robot lawyers ”" (2022) 26 (3) (L & C L R) 951.951

[3] Harry Surden , " Artificial Intelligence and Law"(2019) 35(4) (G. S. U. L .R) 1305,1335

Some researchers believe that the evolution of AI systems, especially those that exhibit new behaviour as a result of their interaction with other systems, poses a significant challenge to traditional civil liability laws. When it is difficult to predict the behaviour of these systems, particularly when several independent systems are working together, establishing legal responsibility for damages can be challenging or even impossible. Consequently, the law of damages may evolve towards a preventive approach that emphasises risk reduction and advance preparedness as a more effective means of ensuring legal protection in an increasingly uncontrollable technological world.[1]

Algorithms are typically used to aid or substitute human analysis for decision-making purposes, to improve decision quality, or to perform actions. The decision-making process can be fully automated or hybrid, requiring human intervention for review. In the public domain, however, the algorithms usually used tend to guide human decision-making rather than making final decisions completely independently.[2]

The development of autonomous AI systems has prompted global efforts to regulate the responsibility of such systems. For example, on 20 October 2020, a decision was issued containing recommendations for the Commission on the system of civil liability associated with artificial intelligence. The European Parliament has also reversed a previous resolution. [3], It was made clear that, for the time being, legal personality should not be granted to autonomous regimes.

Therefore, as can be seen from the above, there is a difference in opinion regarding the legal status of artificial intelligence tools and their accountability for any damage resulting from their use. It is important to research the potential consequences of establishing a specific legal status for the most sophisticated smart systems, including limiting electronic personalities to instances where robots make independent decisions or interact with third parties autonomously. Therefore, concepts must be controlled through orders and the analysis of data carried out by artificial intelligence, as well as its intervention in legislation and the simplification of laws. A legal framework must be established to determine the legal status of artificial intelligence and the extent to which it is subject to liability.

3-The problem of intellectual property:

One of the issues raised by the use of artificial intelligence in the legislative process or the simplification of legal language is who owns these laws. When artificial intelligence is used to prepare draft legislative texts, or to simplify or explain legal texts, can artificial intelligence be considered the author of these laws? How are current intellectual property laws applied to content produced by artificial intelligence? Ambiguity in this area can hinder innovation and result in legal disputes. Important legislation is needed to study all cases of artificial intelligence being used in legislation and attribute it to the relevant legislative body. Thus, legislation and regulations will decide whether the results of artificial intelligence are subject to intellectual property rights.

Section Two : Moral Constraints

In recent years, there has been a rapid increase in the use of AI in various fields, including law. AI techniques are being used to write laws, understand legal texts and make legal language clearer for everyone. This progress has raised important ethical questions about the extent to which AI is used in law-making, given

[1]Ryan Calo , "Robotics and the Lessons of Cyberlaw " (2015) 103 (California Law Review) 513 ,558

[2]Busuioc Madalina," Accountable artificial intelligence: Holding algorithms to account"(2020) 81(5) (Public Administration Review) 825 , 828

[3]On 16 February 2017, the European Parliament passed a resolution directing recommendations to the Civil Law Rules Committee on robotics. The resolution requests that the Commission establish a clear legal framework to regulate the development of robots, including autonomous systems and intelligent robots. Several new legal descriptions of robots have been created as a result, such as 'non-human electronic deputy', which denotes a robot that becomes part of a person's identity, and 'human deputy', which refers to the person responsible for errors that occur during the operation of the robot. The resolution also called for advanced autonomous robots to be granted legal status as cyberpersonas.
.See : European Parliament, 'Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103(INL))' [2018] OJ C252/239.

the importance of this field and its direct impact on individuals' rights and societies' interests. Among the most prominent ethical challenges facing the use of AI in the legislative process are:

1-Algorithmic Bias:

It is certain that artificial intelligence systems are trained using huge amounts of data. If this data contains historical biases or special ideologies that benefit a certain social group, or express their opinions and ideas, then artificial intelligence may reflect these factors in its answers and proposals. For example, in the legislative process, bias can cause an algorithm to propose discriminatory laws that benefit a certain group at the expense of another, or to legislate laws that do not represent all segments of society, but rather serve an ideology, belief or set of ideas that meet the needs of the legislator. This results in a deficient legal base in general, and in rights being achieved by ignoring the needs of other groups in society, thus striking at the core principles of justice and equality.

A clear example of this is Amazon's e-commerce specialists' recruitment algorithms used to hire software engineers. The data entered lacked fairness because it favoured the employment of men at the expense of women because it was trained on biased historical data. Ultimately, Amazon stopped using algorithmic hiring decisions.[1]

2. **Privacy and data sovereignty**

Privacy is the right to control one's personal information and private data. When artificial intelligence is adopted in legislation, data relating to individuals or organisations, such as legal precedents or social and economic information, can be used to estimate the impact of laws. It is therefore essential to ensure that the collection and processing of this data complies with robust data protection principles, such as minimising the amount of data collected, setting clear objectives, being transparent, maintaining data integrity, and ensuring accountability. Individuals must also have the right to access, modify and delete their information, request limitations on the processing of this data, and object to its use in automated decision-making processes.

3-**Transparency, neutrality and integrity**:

The data, systems and business models associated with artificial intelligence systems must be transparent so that they can be understood by stakeholders. People should be aware that they are dealing with an AI-based system, and they should also be informed of its capabilities and limitations. This principle requires data processing methods to be facilitated and presented in a simple, easy-to-understand manner so that they can be audited by community entities or censored.[2]

In addition to cybersecurity, artificial intelligence systems require large amounts of data. This makes them attractive targets for cyber attacks. Therefore, the security of these systems must be strictly regulated to protect sensitive data from intrusion. Although artificial intelligence can be a powerful tool in the legislative process, simplifying the language of the law by processing huge amounts of data in a very short time, its results are sometimes inaccurate. Therefore, the human element must be monitored, making the role of the legislator pivotal in the legislative process.

Conclusion:

Artificial intelligence is an important element in the development of legal systems. It is no longer just a technical tool; it is also a strategy aimed at increasing the efficiency of legislative processes and achieving justice through clearer and simpler legal language. This study has shown that AI can have a positive impact on the

[1] Köchling Alina, Marius Claus Wehner," Discriminated by an algorithm: a systematic review of discrimination and fairness by algorithmic decision-making in the context of HR recruitment and HR development "(2020) 13 (3) (Business Research) 795 ,796

[2] Kawthar Mensal "*The Role of E-Governance in Algeria: Towards the Emergence of a Law for E-Governance* "(n 1) 512

legislative industry by improving the quality of legal texts, identifying duplicates and inconsistencies, promoting inclusivity and simplifying legal language while ensuring accuracy and preserving content.

Despite its great benefits, artificial intelligence technology faces several ethical and legal challenges. These challenges include its liability in the event of harm and the ambiguity surrounding its legal adaptation.

AI also analyses thousands of legal texts to identify duplicates, inconsistencies and loopholes. It also suggests more precise and practical formulations, thereby raising the quality of new legislation. Additionally, natural language processing techniques simplify complex legal texts, making them easily understandable to non-specialists and supporting the principle of 'law enforcement', thereby strengthening citizens' confidence in the legal system.

Furthermore, AI reduces the time and effort required for analysing and drafting legislation, helping to speed up the legislative process without compromising quality. Despite these advantages, artificial intelligence still faces legal ambiguity regarding liability for damages resulting from legislative or interpretative recommendations. Additionally, the ambiguity surrounding its legal assessment raises questions about who is responsible for errors (whether the legislator, programmer or system itself).

Based on these results, the following recommendations can be made:

- Enact national legislation to regulate the use of AI in legislation.

- The need for continuous human oversight of the outcomes of AI in legal matters.

- Conduct a permanent ethical review of any legal system based on artificial intelligence through specialised committees.

- Promote diversity in teams that develop algorithms to reduce bias.

- Qualify legislators and legal specialists in the principles and ethics of artificial intelligence by integrating artificial intelligence into legal education.

References

Decrees and laws :

1. Law No 01-09 of 26 June 2001, Official Gazette of the People's Democratic Republic of Algeria, No 39 (27 June 2001).

2. Executive Decree No 21-219 of 20 May 2021, Official Gazette of the People's Democratic Republic of Algeria, No 50 (24 June 2021).

European Union materials

1. European Parliament, 'Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103(INL))' [2018] OJ C252/239.

Books:

2. Ashley k D, *Artificial Intelligence and Legal Analytics: New Tools for Law Practice in the Digital Age* (Cambridge University Press 2017)

3. Khudair Al-Obaidi O, *Contemporary Applications of Crimes Caused by Artificial Intelligence: Legal Study in the Perspective of International Law* (Arab Center for Publishing and Distribution, Cairo, Egypt, 2022)

4. Mamdouh Ibrahim Kh, *Legal Regulation of Artificial Intelligence* (Dar Al-Fikr Al-Jami, Alexandria , Egypt, 2022)

University theses:

1. Abdel Baqi Z , "Problematic Translationof the Terminology of the Algerian Nationality Law", (LLM thesis , Abu Bakr Belkaid University Tlemcen 2015)

2. Mansel K , "The Role of E-Governance in Algeria: Towards the Emergence of a Law for E-Governance" (PHD thesis , University, 8 May1945 Guelma, Algeria 2023)

Articles:

1. Alina K , Claus Wehner M , " Discriminated by an algorithm: a systematic review of discrimination and fairness by algorithmic decision-making in the context of HR recruitment and HR development " (2020) 13(3)(Business Research) 795 ,796

2. Calo R, "Robotics and the Lessons of Cyberlaw ", (2015) 103 (5) (California Law Review) 513 ,558

3. Casey A ,J, " The Death of Rules and Standards ", (2017) 92(4) (maurer shcool of law indiana law journal)1401,1410

4. Hammami M , " Quality of Legislation Making and Drafting" (2023) 37(2) (Annals of the University of Algiers1) 191 ,201

5. Hassan Ali A I , "The Future of Higher Education in Light of Artificial Intelligence - Global Innovation Index 2022 and Iraq's Location therein " (2025) 4 (1) (S. J .E .D) 1 ,6

6. Loy M , "Legal liability for artificially intelligent "robot lawyers """ (2022) 26(3) (L & C L R) 951,951

7. Madalina B ,Accountable artificial intelligence: Holding algorithms to account"(2020) 81(5) (Public Administration Review) 825,828

8. Mellinkoff D , the language OF the Law, (1964) 63(1)(michigan law review) 180,182

9. Nassakh F , "Legal Language in Algerian Legislation between Persistence and Oscillation "(2019) 4(33) (Annals of the University of Algiers) 81 ,83

10. Preethi S , " A Survey on Artificial Intelligence " (2020) 3(2) (IJICT) 39,41

11. Sayed Abdul Razzaq K ," Methodology for Measuring the Impact of Legislation among International Practices and Experiences and the Requirements of Application in the Arab Countries",(2018) 3(2) (Scientific Journal of the Faculty of Economic Studies and Political Sciences) 41 ,50

12. Surden H , "Artificial Intelligence and Law", (2019) 35(4) (G. S. U. L .R) 1305,1335

Contributions to edited books

1. Ghosh M and Thirugnanam A, 'Introduction to Artificial Intelligence' in Srinivasa K G and others (eds), Artificial Intelligence for Information Management: A Healthcare Perspective* (Springer 2021) <https://doi.org/10.1007/978-981-16-0415-7_2> accessed 5 february 2025

Websites:

2. Cornish Ch , "UAE set to use AI to write laws in world first published "(Apr 20 2025) ,< https://www.ft.com/content/9019cd51-2b55-4175-81a6-eafcf28609c3 > accessed 22 apr 2025

3. Holdsworth J ," What is deep learning?" (17 jun 2024)

4. <https://www.ibm.com/think/topics/deep-learning > accessed 5 july 2025

5. Li H , Gong R, Jiang H . "Political Actor Agent: Simulating Legislative System for Roll Call Votes Prediction with Large Language Models "(dec 2024) < https://arxiv.org/abs/2412.07144> accessed 10 february 2025

RESEARCH ARTICLE

The Impact of China's Industrial Structure Adjustment on Trade and Technological Cooperation between China and the Eurasian Economic Union

Yuan Wang
Lecturer
Shanghai University of Political Science and Law
China
E-mail: wangyuanbsu@163.com

Zhusheng Liu
Lecturer
Shanghai University of Political Science and Law
China
E-mail: wangyuanbsu@163.com

Yuhu E.
Graduate Student
Belarusian State University
Belarus
E-mail: wangyuanbsu@163.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords China, Eurasian Economic Union, trade, technological cooperation, innovation, development

Abstract

China's industrial structure has undergone profound transformation in recent decades, shifting from a reliance on labor-intensive production to innovation-driven and high-tech sectors. This restructuring has reshaped the country's external economic relations, particularly with the Eurasian Economic Union (EAEU), a regional integration bloc that serves as a strategic partner for China. This study examines how China's industrial upgrading influences bilateral trade dynamics and the development of technological cooperation mechanisms with the EAEU member states. Using a multidisciplinary approach combining trade statistics, policy analysis, and case studies of collaborative projects, the paper highlights the evolving complementarities between China's advanced manufacturing and digital economy sectors and the EAEU's energy, raw material, and transit advantages. The findings suggest that industrial adjustment in China stimulates demand for diversified imports, while also promoting the export of high-value-added goods and services. Additionally, the transition toward green and digital industries has fostered new platforms for scientific collaboration, infrastructure development, and technological innovation across Eurasia. However, the research also identifies challenges, including regulatory disparities, unequal technological capacities, and geopolitical tensions that may impede the depth of cooperation. Overall, the study argues that the modernization of China's industrial structure is both a driver and a test for the sustainable growth of China–EAEU economic and technological relations, with long-term implications for regional integration and global value chain participation.

Citation. Wang Y. , Zhusheng L.,Yuhu E. (2025). The Impact of China's Industrial Structure Adjustment on Trade and Technological Cooperation between China and the Eurasian Economic Union. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 261–265.
https://doi.org/10.56352/sei/8.11.18

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 19.05.2025 | Accepted: 17.06.2025 | Published: 30.08.2025 (available online)

Introduction

The rapid evolution of China's industrial structure represents one of the most significant economic transformations of the 21st century. Beginning with the "Made in China 2025" strategy and subsequent innovation-led policies, the country has prioritized upgrading its production base, moving away from low-cost

manufacturing toward high-tech, digital, and green industries. This industrial adjustment not only supports China's domestic goals of sustainable development but also has far-reaching consequences for its international economic partnerships.

The Eurasian Economic Union (EAEU), established in 2015 and comprising Russia, Belarus, Kazakhstan, Armenia, and Kyrgyzstan, has become an essential strategic partner in China's broader Eurasian engagement. As part of the Belt and Road Initiative (BRI), cooperation between China and the EAEU extends beyond traditional trade to encompass infrastructure development, digital connectivity, and joint technological innovation. While the EAEU primarily exports energy resources, agricultural products, and raw materials, China increasingly exports machinery, consumer electronics, and advanced technological solutions. This complementarity is now evolving into more sophisticated interdependence as China's industrial priorities shift toward innovation-driven growth.

The transformation of China's industrial structure also aligns with global megatrends such as the green economy, digitalization, and regional supply chain integration. For the EAEU states, this transition offers opportunities to attract Chinese investment, modernize their industries, and participate in cross-border innovation networks. At the same time, disparities in technological capabilities, divergent regulatory frameworks, and external geopolitical pressures pose challenges to deepening cooperation. Understanding these dynamics is critical for policymakers and scholars seeking to evaluate the long-term prospects of China–EAEU trade and technological collaboration.

This paper explores the implications of China's industrial restructuring for trade and technology cooperation with the EAEU, analyzing both opportunities and constraints. By situating the analysis within the broader context of regional integration, the study contributes to debates on how structural economic change can reshape international partnerships in the age of globalization and multipolarity.

Main Body

As a key partner of the Eurasian Economic Union, China has always maintained close economic and trade ties with EAEU member states. On May 17, 2018, the Kazakhstan-Astana Economic Forum was held. Attendees included China's Deputy Minister of Commerce and international trade negotiator Fu Ziyin, Chairman of the EAEU Executive Committee Serge Sargsyan, and representatives of EAEU member states. During this meeting, delegates signed the Agreement on Economic and Trade Cooperation between the People's Republic of China and the Eurasian Economic Union. The agreement includes 13 chapters covering customs cooperation, trade facilitation, intellectual property rights, sectoral cooperation, and public procurement. This agreement represents the first major institutional agreement in the trade and economic sphere between China and the EAEU (EAEU, 2018).

For a long time, the economic activity of China and the EAEU has been influenced by global commodity price fluctuations. Rapid development of China's manufacturing sector, especially over the last decade, has sharply increased China's demand for raw materials. In recent years, China's economy has begun to transform, eliminating some outdated industries and production methods, particularly low-tech raw material processing industries.

One goal of China's industrial restructuring is to reduce reliance on fossil fuels and improve energy utilization. In 2020, China's consumption of clean energy—such as natural gas, hydro, nuclear, and wind energy—accounted for 24.3% of total energy consumption, an increase of 1.0 percentage point from 2019 (National Bureau of Statistics of China, 2021). For example, in 2020, China's installed power generation capacity included:

- Thermal power: 1,245.17 million kW
- Hydropower: 370.16 million kW
- Nuclear power: 49.89 million kW
- Grid-connected wind power: 281.53 million kW

- Grid-connected solar power: 253.43 million kW

These data indicate China's significant investment in clean energy sectors requiring relatively high technological innovation, such as solar and wind energy. China continues to increase investment in energy structure reforms, steadily raising the share of new energy.

EAEU Exports and Trade with China

Currently, EAEU member state exports mainly consist of fossil fuels and raw materials. Most exports to third countries are mineral commodities: approximately 75% in Kazakhstan, 66% in Russia, and 47% in Belarus. Among goods exported by EAEU members to third countries, mineral products account for 60.6%, metals and manufactured metal products 10.5%, and chemical products 6.7%. Russia is the main exporter of these goods to external markets, accounting for roughly 80% (EAEU, 2020). The trade content between China and the EAEU falls largely within these categories.

According to Chinese customs data from 2017 to 2021, trade between China and EAEU countries remains dominated by primary industrial goods and raw materials (see Table 1). The trade primarily consists of light industrial products and raw materials. By 2015, the share of non-raw exports in total EAEU exports had steadily increased. By 2016, non-raw goods accounted for 56.9% of EAEU exports, while raw goods accounted for 43.1% (EAEU, 2016).

This indicates considerable potential for expansion into high-tech consumer markets and highlights the mutual technological innovation shortcomings of both sides. There remain ample opportunities for R&D collaboration and the production of high-tech goods with independent intellectual property rights and market demand.

Table 1: Main Categories of China's Foreign Trade with EAEU Countries

Country	Main Exports from China	Main Imports to China
Russia	Mobile phones, fur clothing, portable data processing equipment	Oil, bituminous minerals, logs, unalloyed nickel
Belarus	Mobile phones, wired communication equipment, steel structures	Potassium chloride, polyamide-6, solid dairy products
Kazakhstan	Rubber/plastic footwear, toys and models, mobile phones	Copper ores and concentrates, crude oil, ferrochrome
Kyrgyzstan	Rubber/plastic footwear, cold-resistant chemical fiber clothing, cotton textiles	Other precious metal ores and concentrates, coal, wool
Armenia	LCD color digital TVs, car tires, compressed gas cylinders, mobile base stations	Copper ores and concentrates, women's chemical fiber down products, distilled spirits
USA	Mobile phones, portable automated data processing equipment, mechanical parts, tablets, microcomputer processing equipment, audio/video equipment	Turbofan/turboprop engines, processor/controller integrated circuits, crude oil

China-EAEU Technological Cooperation

Within the "Belt and Road Initiative," China demonstrates enthusiasm for broad and deep cooperation with EAEU countries. China's comparative advantages in artificial intelligence, the Internet, and ICT can

serve as platforms for technological innovation collaboration in EAEU member states' manufacturing sectors.

In future scientific and technological innovation, China can leverage its strengths in these areas as a foundation for cooperation, actively promoting R&D and innovation exchanges with EAEU countries. Given differing distributions of mutual direct investments, China has broad options in trade and technological innovation cooperation with EAEU countries. According to the Eurasian Development Bank's Center for Integration Studies, as of early 2017, 43.8% and 10.9% of bilateral direct investments in oil, gas, and non-ferrous metals went to EAEU countries. Other sectors included communications and IT (9.6%), chemistry (8.1%), finance (6.1%), transport (4.2%), and agriculture/food (3.7%) (EDB, 2017).

China possesses strong innovation advantages in communications, IT, finance, and transport. Cooperation in these areas can maximize respective advantages, conserve innovative resources, and translate technological collaboration into tangible results, supporting modernization and trade development.

For example, as of 2016, Chinese enterprises' direct investment in Belarus increased to $417 million, concentrated in machinery (57%), tourism (24%), and construction (19%) (Belarusian Ministry of Commerce, 2017). In these sectors, China and Belarus have complementary strengths.

Financial Cooperation and Trade Stability

Early China-Russia cooperation in finance and currency has created strong foundations. Chinese commercial banks provide yuan clearing services in Russia, beginning in 2017 with the Industrial and Commercial Bank of China. Local currency swap agreements have positively influenced bilateral trade.

Following the 2014 Crimea incident and subsequent Western sanctions, China's import of Russian crude oil rose sharply, partially alleviating sanctions pressure. In February 2022, after the Russia-Ukraine conflict escalated, new Western sanctions further affected Russia. Existing financial and e-commerce cooperation with China helped maintain stable trade flows, and online purchases of Russian rubles by Chinese residents supported ruble stability.

Leveraging China's internet finance and e-commerce strengths, many Russian goods are sold on the China-Russia online trading platform and are quickly purchased by Chinese residents. On February 24, 2022, China's General Administration of Customs officially permitted the export of Russian wheat to China, significantly increasing Russia's market share. This demonstrates that financial cooperation facilitates trade and technological collaboration.

Conclusion

The international situation caused Chinese potassium fertilizer prices to reach record highs in 2022. Belarus, rich in potassium resources, has broader prospects for cooperation with China. Based on this, other trade and technological collaborations between China and Belarus also developed. From January to July 2021, bilateral import/export volume reached $2,223.23 million, up $785.805 million year-on-year (Chinese Customs, 2021).

Despite sanctions after the Russia-Ukraine conflict in 2022, China-EAEU cooperation made breakthroughs in finance and currency, notably through internet finance and e-commerce. In the future, trade and technological cooperation will differ significantly from the past, moving from raw material dominance toward technological modernization and transformation.

Acknowledgment

The authors wish to express their gratitude to Shanghai University of Political Science and Law and Belarusian State University for their academic support during the preparation of this research. Special thanks are also extended to colleagues and peer reviewers who provided constructive feedback that significantly improved the quality of this study.

Conflict of Interest

The authors declare no conflict of interest regarding the publication of this article.

References

1. Balasubramanyam, V. N., Salisu, M., & Sapsford, D. (1996). Foreign direct investment and growth in EP and IS countries. The Economic Journal, 106(434), 92–105. https://doi.org/10.2307/2234933
2. Gao, H. (2020). China's industrial policy in the era of globalization: Shifting focus from manufacturing to innovation. Journal of Contemporary China, 29(124), 593–608. https://doi.org/10.1080/10670564.2020.1719393
3. Kaczmarski, M. (2017). Non-Western visions of regionalism: China's New Silk Road and Russia's Eurasian Economic Union. International Affairs, 93(6), 1357–1376. https://doi.org/10.1093/ia/iix182
4. Liu, Z., & Xu, C. (2019). Industrial upgrading and the transformation of China's trade structure. China Economic Review, 57, 101314. https://doi.org/10.1016/j.chieco.2019.101314
5. Luzyanin, S. (2019). Sino–Eurasian integration: Prospects for trade and technological cooperation. Journal of Eurasian Studies, 10(2), 145–156. https://doi.org/10.1177/1879366519848924
6. Ospanova, S. (2021). Eurasian Economic Union and China's Belt and Road: Opportunities and challenges. Central Asian Affairs, 8(1), 1–22. https://doi.org/10.1163/22142290-bja10006
7. Song, L., & Yang, J. (2017). China's industrial upgrading and trade structure adjustment. The World Economy, 40(5), 1014–1036. https://doi.org/10.1111/twec.12441
8. Vinokurov, E. (2018). Introduction to the Eurasian Economic Union. London, UK: Palgrave Macmillan. https://doi.org/10.1007/978-3-319-90884-6
9. Wang, Y., & Liu, Z. (2022). Belt and Road Initiative and Eurasian economic cooperation: Industrial and technological dimensions. Eurasian Geography and Economics, 63(3), 420–438. https://doi.org/10.1080/15387216.2021.1923496
10. Zhang, X. (2016). China's industrial transformation and implications for global trade. China & World Economy, 24(6), 1–23. https://doi.org/10.1111/cwe.12180
11. Hubei Provincial Seventh National Census Bulletin. Retrieved from http://tjj.hubei.gov.cn/tjsj/tjgb/pcgb/qrp/202105/t20210525_3559343.shtml
12. Hubei Provincial Bureau of Statistics. Hubei Statistical Yearbook. Retrieved from http://tjj.hubei.gov.cn/tjsj/sjkscx/tjnj/qstjnj
13. Committee for Economic Development of Small and Medium Cities, China. Report on the Development of Small and Medium Cities in China. Beijing: Social Sciences Literature Press, 2015, 330 pp.
14. National Bureau of Statistics of China. China Statistical Yearbook 2016. Beijing: Statistics Press, 2017, pp. 71–72.
15. Report on Urban Science and Technology Innovation Development in China 2020. Beijing: Science and Technology Literature Press, 2021, pp. 34–36.
16. Data on changes in commercial residential house prices, January 2022. Retrieved from http://www.stats.gov.cn/tjsj/sjjd/202102/t20210223_1813872.html
17. Zhigan, T., Lingtong, C., & Yanqiu, C. Development Status and Analysis of Science and Technology Innovation Platforms in Small and Medium Cities—The Case of Weihai. 2014.

RESEARCH ARTICLE

The importance of psychological preparation for athletes participating in the Olympic Games and its contribution to achieving title

Marouf Said
Doctor
Staps Univ. Chlef
Algeria
E-mail: s.marouf@univ-chlef.dz, Orcid: https://orcid.org/0009-0000-9131-3026

Zemam Abdelrahman
Doctor
Staps Univ. Djilali Bounaama
Algeria
E-mail: a.zemam@univ-dbkm.dz, Orcid: https://orcid.org/0000-0001-7420-5082

Derradji Abbes
Doctor
Staps Univ, bouira
Algeria
E-mail: a.derradji@univ-bouira.dz, Orcid: https://orcid.org/0009-0006-3911-981X

Amina Djaafar
Doctor
Staps Univ. Chlef
Email: d.amina@univ-chlef.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords psychological preparation, the Olympic Games

Abstract
The study aimed to learn about the importance of psychological preparation for athletes participating in the Olympic Games and the contribution of psychological preparation in achieving titles and winning medals. For this purpose, the researchers designed a survey consisting of 14 questions distributed to a sample of 16 coaches and after the statistical analysis using a good matching test enough, the researchers reached that the coaches have knowledge and formation that allows them to prepare psychological preparation for the athletes in games Olympic, and the use of psychological preparation techniques is one of the hidden factors that contribute to crowning titles and winning medals according to the opinion of the coaches The study recommended the need to use psychological preparation within the annual plan for training and provide the necessary capabilities for its programming and the establishment of this broad cognitive field by including the profession of sports psychological report in sports teams, especially at the level of elite teams.

Citation. Marouf, S., Zemam, A., Derradji. A., Amina. D., (2025). The importance of psychological preparation for athletes participating in the Olympic Games and its contribution to achieving titles.. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 266–273. https://doi.org/10.56352/sei/8.11.19

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.01.2025 | Accepted: 17.05.2025 | Published: 30.08.2025 (available online)

1- Introduction and problematic of the study:

The psychological preparation of the athletes participating in the Olympic Games is very important to ensure the best performance and improve their performance in competitions. This preparation aims to build athlete's confidence in himself, enhance his ability to withstand pressure, improve focus, as well as develop feelings control skills.

Psychological preparation is an important field of mathematical psychology and is mainly related to the high level

sport, and the interest in psychological preparation has taken from one Olympic course to another with curricula and health scientific methods through mathematical psychology and this matter has become an integral part of the training process and is very important, says "Orlick" in his study that what is characterized by sports heroes from others to rely on self -motivation, motivation and sacrifice with a large part of life during life Training and preparing for competition, as many studies have confirmed, such as "Greenspan et Feltz 1989", which emphasized psychological effects on improving performance in official competitions

The field sports psychology is one of the most important information that entered the field of sports training, which contributes a great deal to developing and developing capabilities for the athlete, as there is a great role for mathematical psychology for the player reaching the highest mathematical mattresses by studying the sports character and knowing the best ways that make this or that athlete at his best to accept training doses as well as meeting the opponent in the best condition and thus overcoming it

He must reach the higher levels in competitive sport that requires hours of daily training in accordance with the requirements of talent and genetic readiness with a codified training program according to scientific and physiological foundations in addition to an important matter, which is psychological potentials and can also be developed through psychological training programs

In a study conducted by 235 Canadian athletes who participated in the Olympic Games, Plos Angeles and Sarajevo, that 75 athletes obtained a medal, they were able to know the psychological factors that allow winning and set one goal to reach it, which is to develop their mental capabilities during their preparation for the Olympic games

(Orlick et Partington 1988)

And if we accurately follow the competition of the Olympic Games and the physical and nervous effort that the athletes exert and the different emotions, and if we look at the training methods and prepare it psychologically and know the psychological pressure that occur Desired.

Through this we raised the following question:

General question:

Do coaches realize and focus on the psychological preparation for athletes in the Olympic Games?

Partial questions:

- Do the coaches focus in their training on the preparation of the athletes psychologically?

. Does the use of psychological preparation contribute to upgrading and achieving titles according to the opinion of the coaches?

2- General hypothesis:

Football coaches realize the value and importance of psychological preparation for athletes participating in the Olympic Games

2-1 Partial hypotheses:

- The coaches participating in the Olympic Games have knowledge and training that allows them to prepare psychologists psychologically

- The use of psychological preparation contributes to upgrading and achieving titles, according to the opinion of the coaches

3- Study objectives:

- Each scientific research has a series of goals that the researcher seeks to reach, and in our research a set of goals we must reach and prove

- Learn the importance of activating the coach's psychological role and his impact on achieving goals in the Olympic Games

- Knowing the effect of psychological preparation on the level of the athletes' performance and its contribution to achieving victory and winning medals and titles.

Psychological preparation for the sports training program for athletes participating in the Olympic Games

4-Previous and similar studies

4-1 First study:

Study the thesis of Dr. Kwash Munira entitled "The reality of psychological preparation for the national elite participating in the Olympic Games.," Daly Ibrahim, Algeria, 2015 This study aims to draw the attention of officials on the sports sector on the need to form specialists in sports psychology and sports psychological counseling with high field efficiency, and integrate them into the process of integrated training of sports clubs, especially elite. And a questionnaire was used as a way to collect information on a case study of the coaches and sports elite athletes participating in the Olympic Games London 2102, and among the most important results are several conclusions that may be the beginning of the formulation of other research topics, in order to establish this broad cognitive field, which is still suffering from a lack of attention, and ambiguity in concepts and technologies by those concerned in the Arab countries in general and Algeria in particular.

4-2 The second study:

Golden study, D and others Al Et D GOULD. Entitled "Developing some psychological features of the Olympic heroes, Journal of Applied Studies for Sports Psychology 2002 Publishing House. Ins Québec and the descriptive curriculum was used by using a psychological test battery on 10 Olympics players from America who won 32 Olympic medals during 7 Olympic courses and one of the most important results reached in psychological features (the ability to adapt and control anxiety .

5-Words in the study

5-1 Psychological preparation:

It is an inseparable complementary process from the integrated preparation of the student, which includes skilled physical preparation,

Cognitive, moral, as it is necessary to plan for it in the long and short term

5-2 Olympic Games

The Olympic Games are among the most important achievements that the Olympic movement brought and is a competition between two athletes in individual or collective meetings and not between countries, and the Olympic Games are especially especially in the International Olympic Committee, as they have all the rights that have to do with them, organizers, exploit them, broadcast and reproduce by any means (1997 P64 P6).

6-Field search procedures:

The descriptive approach, which is defined as a study, was used to try to analyze, interpret and present a reality of phenomenon, or try to analyze the content of the documents to reach conclusions or generalizations related to reality or describing the tasks and responsibilities related to the work or job (Wael Abdul Rahman, 2007)

7- Study sample: Some coaches participating in the Olympic Games

8- Study tools:

questionnaire in research:

The questionnaire is a set of written questions that promise with the intention of obtaining information or opinions of the researchers about a specific phenomenon or position.

In social sciences that require obtaining information, beliefs, perceptions or opinions of individuals (Mahmoud Obaidat, 1991)

1- The scientific conditions of the tool

The sincerity of the content (arbitrators): The sincerity of the questionnaire means making sure that it will measure what is prepared to measure it, as it means "the inclusion of the questionnaire for all the elements that must be included in the analysis on the one hand, and the clarity of its paragraphs and vocabulary on the other

To make sure of the sincerity of the study tool, we used the sincerity of the arbitrators as a tool to make sure that the questionnaire measures what was prepared for him, as we distributed the questionnaire to a group of professors from the University of Al -Jilali Bounaqam Khamis Miliana. Depending on the observations and directions made by the arbitrators, we made the amendments agreed upon by most of the arbitrators, as some of the phrases were deleted and the formulation of others was changed.

After making sure of the sincerity of the questionnaire, we went directly to the trainers who were chosen to carry out this study, as the questionnaires were distributed to 16 coaches.

9- Statistical methods used in the study:

The study group relied on statistical methods of the percentage as a statistical method that serves the topic in order to take the codified form **χ^2 test**

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

10- Research fields:

10-1 Timetable:

This research was conducted in the year 2023

10-2 Spatial field:

The field study was conducted on and specifically a group of coaches who supervised the athletes participating in the Olympic Games and even preceded coaches through the email service and the Google form.

11-View and discuss the results:

The hypothesis 1: The coaches of the participants in the Olympic Games have knowledge and composition that

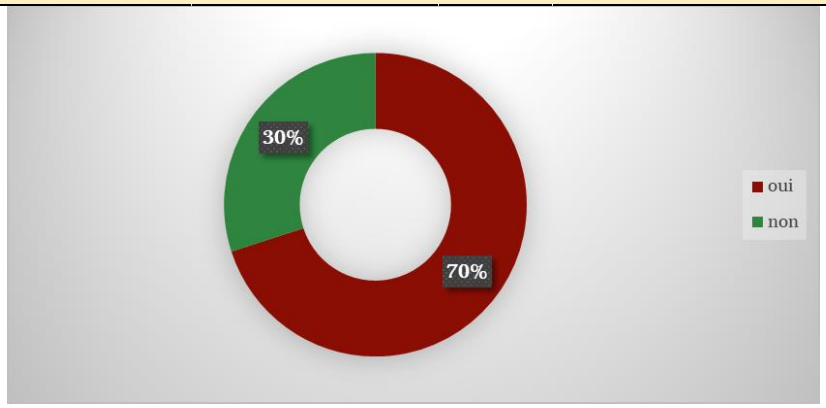
allows them to prepare the athletes psychologically

The first question: Do you think psychological preparation is one of the elements of success in the Olympic Games competition?

The aim of the question: to know how important the psychological preparation of the athletes participating in the Olympic Games.

Table No.: 01 shows the importance of psychological preparation for athletes participating in the Olympic Games

Significance	Significance level	Degree of freedom	χ^2 table	Calculated χ^2	p.c	Repetition	Answer
significant	0.05	1	3.84	4.00	70%	12	Yes
					30%	4	no
					%100	16	the total



- Form No. 01 explains the answers of the trainers about the first question

Table analysis:

Through our analysis of Table No. (01) and graphic (01) it is clear to us that the majority of coaches participating in the Olympic Games are aware of the value and importance of psychological preparation for the players, and therefore the value of the calculated as 4.00 while the value of the ka square is at the level of 0.05 and the degree of freedom was estimated at 1.84 and therefore the teams are statistically indicated

Interpretation of results: By presenting and analyzing the results of the first question, we note that the value of the calculated as 4.00 while the value of the al -Majul (3.84) is at a level of 0.05 and the degree of freedom was estimated at 1 and accordingly, the difference is statistically indicative, these results came to express that most of the coaches are aware of the value and importance of the psychological aspect and this matter is due to several reasons, including their formation and their graduation in sports training high level And their study of theoretical standards during their formation.

The second question: Is there a psychological record of the technical preparation for the athletes?

The aim of the question: to know the possibility of a physical report specialized in the technical team of the sports teams.

Table No. (02) shows the presence of the psychological report during the psychological preparation of the athletes

Significance	Significance level	Degree of freedom	χ^2 table	Calculated χ^2	p.c	Repetition	Answer
significant	0.05	1	3.84	6.25	%19	03	Yes
					%81	13	no
					%100	16	the total

Form No. 02 explains the answers of the trainers about the second question

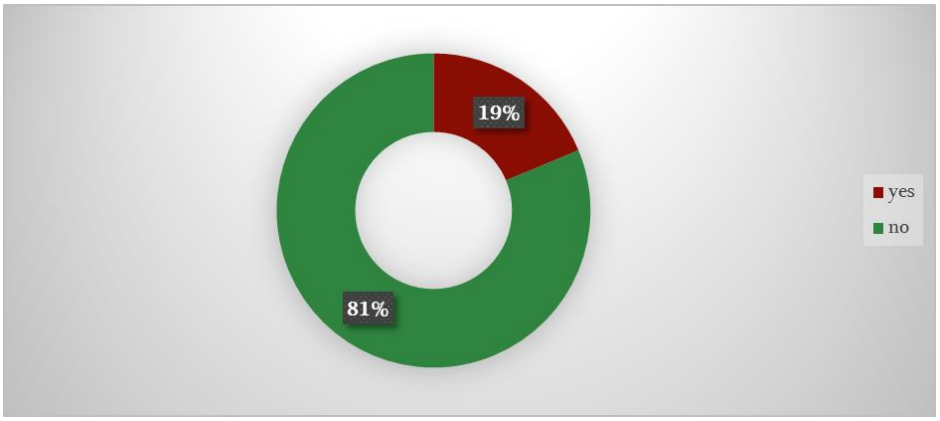


Table analysis:

Through our analysis of schedule No. (02) and graphic representation No. (02) it is clear to us that the majority of coaches deny the psychological preparation for athletes without the presence of a specialized psychological report, and this is evidence that 81 % is greater than the remaining percentage of the trainers and estimated at 19 % who do not have the participation of this field, and therefore the value of the calculated CASURI is 6.25 while the value of the CHO is at the level of 0.05 and degree Freedom was estimated at 1.84, and therefore the difference here is statistically indicated.

Interpretation of the results: By presenting and analyzing the results of the second question, we note that the calculated value of the calculated as 6.25, while the CAMULA (3,84) is at the level of significance of 0.05 and the degree of freedom was estimated at 1 and accordingly, the difference is statistically indicative, these results came to express a lack of psychological preparation, that is, the absence of a specialized psychological report and the trainer performs these tasks.

The hypothesis 02: The use of psychological preparation contributes to upgrading the level of athletes and

achieving titles according to the opinion of the coaches

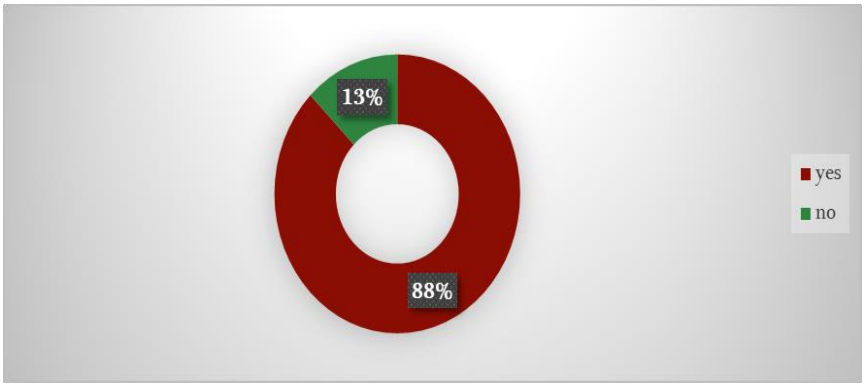
According to the opinion of the coaches

The third question: In your opinion, is the psychological numbers that you do with the players contributes to upgrading their performance?

The aim of the question: The coach's opinion on the effectiveness of psychological preparation in upgrading the level of athletes and winning medals

Table No. (03) shows the opinion of the coaches on the effectiveness of the psychological preparation in raising the level of athletes

Significance	Significance level	Degree of freedom	χ^2 table	Calculated χ^2	p.c	Repetition	Answer
significant	0.05	1	3.84	09	%87.5	14	Yes
					%12.5	2	no
					%100	16	the total



Form No. 03 explains the answers of the coaches about the third question

Table analysis:

Through our analysis of schedule No. (03) and graphic representation No. (03) it is clear to us that the majority of coaches realize the importance of psychological preparation in raising the level of performance of athletes, and this is evidence that 87.5% is greater than the remaining percentage of coaches and estimated at 12.5%, and therefore the value of the calculation of the calculated 09 while the value of the calculus as a sign of 0.05 and the degree of freedom was estimated at 1 It reached 3.84, and therefore the difference here is statistically indicated.

Interpretation of the results: By presenting and analyzing the results of the second question, we note that the value of the calculated as calculated 9 while the value of the cabinet (3,84) at the level of 0.05 and the degree of freedom was estimated at 1 and therefore the difference is statistically significant, these results came to express the extent of the coaches' conviction of the importance of psychological preparation in training and preparation of athletes in the Olympic games to improve their level and achieve more Medal and honoring their homeland

12- Conclusions and illustrations

Despite the importance of psychological preparation, it remains not up to the required level in the absence of a

specialized psychological record

- Those in charge of sports and training must ensure a qualitative training in psychological preparation strategies and to open a specialized composition of a psychological record.
- And the coaches' awareness of the importance of psychological preparation in preparing and developing players, which is a positive matter that allows the formation of players and their support in their sports competitive career
- It is necessary to form specialists in psychological psychological preparation, i.e. the proposal of the project to form the level of the level of Misance and the professional master, and this is to accompany the best for athletes by a specialist

Providing a greater number of psychologists, because today the victory and the loss is based on parties only

Acknowledgment

The authors would like to extend their sincere gratitude to the participating coaches who generously shared their insights and experiences, which were invaluable for the completion of this research. Special thanks are also due to the institutions of STAPS University of Chlef, STAPS University of Djilali Bounaama, and STAPS University of Bouira for their academic support. The authors also appreciate the constructive comments and encouragement provided by colleagues and reviewers, which helped to strengthen the quality of the study.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the research, authorship, or publication of this article.

References

1. Abdel-Khaleq, A. (1983). Professional psychology. Beirut, Lebanon: University Publishing and Printing House.
2. Abdel-Khaleq, A. (1986). Lectures on physiological psychology. Alexandria, Egypt: University Knowledge House.
3. Allawi, M. H. (2002). Psychology of the sports coach. Cairo, Egypt: Dar Al-Fikr Al-Arabi.
4. Allawi, M. H. (n.d.). Psychological and skill tests in the sports field. Cairo, Egypt: Dar Al-Fikr Al-Arabi.
5. Beck, A. F. (2003). The sports coach in group games. Alexandria, Egypt: Maʿārif.
6. Coubertin, P. de. (1994). The Olympic manifesto. Lausanne, Switzerland: Les Editions du Grand Pont.
7. Georges, D. (1996). The fascinating history of the Olympic Games. Belgium: Clé International.
8. Pacquet, Y. (2007). 150 small sports psychology experiences to better understand the champions. Paris, France: Dunod.
9. Weinberg, R. S., & Gould, D. (2019). Foundations of sport and exercise psychology (7th ed.). Champaign, IL: Human Kinetics.
10. Raglin, J. S. (2001). Psychological factors in sport performance: The mental health model revisited. Sports Medicine, 31(12), 875–890. https://doi.org/10.2165/00007256-200131120-00004

RESEARCH ARTICLE

Urban Administrative Oversight and Property Rights: A Comparative Legal Analysis of Building Permits and Public Interest in Urban Planning

M'hamed Djebbar

Doctor

University Centre of Maghnia, Mediterranean Laboratory for Legal Studies

Algeria

E-mail: m.djebar@cu-maghnia.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Administrative control, property rights, building permit, urban planning law, public interest, comparative legal study.

Abstract

The relationship between property rights and administrative oversight represents one of the most sensitive intersections in contemporary legal and urban planning studies. This article investigates the dynamics of administrative control in urban contexts, with particular emphasis on the building permit system as a mechanism of balancing individual freedoms with collective interests. Property rights, sanctified in constitutional texts and reinforced by statutory law, are traditionally perceived as comprehensive and exclusive, ensuring both enjoyment and exploitation of assets by their owners. However, the exercise of such rights cannot be absolute, as they often intersect with public interest considerations, urban development policies, and environmental sustainability imperatives. Through a comparative legal study, this research explores how different jurisdictions reconcile the protection of private property with the necessity of administrative regulation, particularly in the issuance, monitoring, and enforcement of building permits. The analysis highlights the dual role of administrative oversight: on one hand, serving as a safeguard against unregulated urban expansion and environmental degradation, and on the other, acting as a limitation on individual freedoms that requires clear legal justification. By situating building permits within the broader framework of urban governance and the principle of proportionality, this study demonstrates that administrative control must strike a balance between legal certainty, equity, and efficiency in urban development. Ultimately, the findings contribute to the ongoing scholarly debate on how urban administrative law can both protect the constitutional sanctity of property and respond to the evolving challenges of modern cities, including sustainability, public safety, and social equity.

Citation. Djebbar M. (2025). Urban Administrative Oversight and Property Rights: A Comparative Legal Analysis of Building Permits and Public Interest in Urban Planning. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 274–282. https://doi.org/10.56352/sei/8.11.20

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.03.2025	Accepted: 01.06.2025	Published: 27.08.2025 (available online)

Introduction

The protection and regulation of rights and freedoms have long occupied a central place in legal systems worldwide. Numerous international conventions have been ratified, specialized institutions established, and constitutional frameworks amended in order to safeguard these fundamental principles. Yet, rights and freedoms are never exercised in an absolute manner; they are necessarily relative, conditioned by the principle that individual freedom ends where the freedom of others begins. Their exercise requires moderation, modernity, and adherence to civic responsibility to achieve the overarching objective of peaceful and orderly coexistence.

Within this framework, public administration assumes the responsibility of preserving security, public order, and social equilibrium. This is primarily achieved through administrative control, which is exercised by competent bodies at both national and local levels. Among the most significant and visible expressions of administrative control lies the regulation of urban planning and construction. These domains represent vital aspects of local governance, as they directly affect the quality of life, the provision of public services, and the enhancement of urban environments. Urban planning decisions shape the living standards of populations by providing infrastructure, housing, and facilities that determine the development trajectory of entire communities.

The state, therefore, entrusts municipalities with the crucial role of defining urban planning policies and development priorities. Such responsibilities are implemented within the framework of a broader national strategy and require cooperative governance and arbitration across institutional levels. Planning tools and urban development regulations establish general rules governing the use of land, the construction or modification of buildings, and the distribution of functions among housing, agriculture, industry, natural landscapes, and cultural heritage. These mechanisms reflect an attempt to balance the individual right to property with the collective imperative of sustainable development and public interest.

Against this background, the present study addresses two central research questions:

1. What are the legal bases and procedural rules that regulate the authority of administrative control in the field of construction?
2. What legal challenges and practical problems arise in the administration's oversight of building permits?

To answer these questions, the research employs an analytical methodology, examining legislative texts, judicial interpretations, and procedural frameworks that shape the authority of administrative oversight in the construction domain. In addition, a comparative method is applied, focusing on Algerian law and contrasting it with French and Egyptian legal systems to identify convergences, divergences, and structural shortcomings.

This study is divided into two parts. The first part explores the concept of the building permit and its supervisory dimension, while the second part examines the procedures and administrative mechanisms for granting such permits.

I. The Concept of Building Permits and Their Supervisory Dimension

1. Definition of Building Permit

From an administrative law perspective, a license generally constitutes an official decision permitting an individual to engage in an activity or perform a specified act under defined conditions. Etymologically, the notion of a "permit" is tied to the authority vested in a governing body to authorize individuals to act within the bounds of legality. While most legal systems refrain from offering a statutory definition of a building permit, leaving its contours to jurisprudence and doctrine, legal scholarship has consistently described it as a preventive measure designed to ensure compliance with planning regulations and the protection of public order.

Jurisprudence defines a building permit as a regulatory instrument that specifies the nature, purpose, and technical requirements of a proposed construction, whether residential, commercial, or service-oriented. Its

primary function is to safeguard environmental integrity and prevent harm to third parties by aligning individual construction initiatives with community interests and public welfare. Another doctrinal perspective emphasizes that the building permit is an administrative decision, issued by a legally competent authority, granting authorization to erect or modify a building. Such authorization is conditional upon strict compliance with urban planning legislation and prior to the commencement of construction works.

In the French system, the building permit (*permis de construire*) is considered both obligatory and preliminary, applying to a wide range of construction activities, including expansions and modifications (*les travaux d'agrandissement ou de construction*). The objective is to preclude unauthorized urban growth and to maintain coherence between private development initiatives and collective urban planning policies. Scholars often describe it as an indispensable administrative license that ensures construction projects conform to established regulations.

The present research advances an expanded interpretation of the building permit, emphasizing its dual nature: it is both a legal authorization for construction and a regulatory instrument aimed at harmonizing urban development with broader societal objectives. In this sense, the building permit not only enables individual enjoyment of property rights but also imposes limits designed to preserve agricultural land, archaeological sites, and environmentally sensitive areas. Thus, it functions as a legal constraint on property rights, justified by the necessity of preventing unregulated construction and safeguarding the urban and environmental fabric.

2. Building Permits as a Restriction on Private Property

Building permits represent one of the earliest forms of administrative restrictions on property rights, introduced to safeguard public order, health, and safety. By subjecting construction activity to administrative oversight, the state ensures that private building initiatives do not generate risks to public health, structural safety, or environmental balance. The issuance of a permit reflects a reconciliation between individual property rights and collective interests, whereby the state assesses the proposed building's conformity with legal and technical standards before granting authorization.

This intervention necessarily tempers the absoluteness of private ownership. Property, once regarded as an inviolable and unrestricted right, has gradually been reframed as a social function, subject to conditions aligned with the general welfare. Consequently, the exercise of property rights through construction is no longer absolute but contingent upon administrative approval. The obligation to obtain a building permit is not a derogation of ownership rights but an expression of their regulated character in a modern legal order.

Constitutions and high courts have recognized that while private property is protected, it may legitimately be subject to restrictions in pursuit of public interest. The Egyptian Supreme Constitutional Court, for instance, has upheld the principle that administrative limitations on property rights are constitutionally acceptable when they aim to preserve public order, health, and security, and when they are proportionate to the social objectives pursued. Hence, the legal framework of building permits epitomizes the evolving balance between individual autonomy and state intervention, reflecting a dynamic interplay between constitutional guarantees and regulatory necessities.

The Right to Build as an Extension of Ownership

The right to build constitutes one of the essential manifestations of the broader right of ownership. In principle, ownership entails the freedom to use, exploit, and dispose of real estate, including the undertaking of urban activities that serve private interests. Construction, as an expression of this freedom, acquires particular importance given its role in shaping both private benefit and collective urban order. Yet, this right cannot be exercised in absolute isolation. Its exercise must not contravene the public interest, urban planning regulations, or the foundations of public order. Accordingly, building activities are subjected to legal controls, mechanisms, and strict supervisory frameworks to ensure compliance with engineering, architectural, and safety standards. The right to build, though derivative of ownership, is thus conditioned by administrative regulation and prior authorization.

Comparative legal systems, including Algerian jurisprudence, have sought to reconcile two competing imperatives: on the one hand, the individual's right to exploit their land through construction, and on the other, the community's right to preserve essential easements such as sunlight, air, visibility, and access. Algerian civil law, similar to comparative jurisprudence, explicitly safeguards these easement rights, elevating them to a level of importance that must be considered before any construction begins. To this end, a building permit serves as a mechanism of prior administrative control, ensuring that the exercise of ownership aligns with collective rights.

The protection of private property has been enshrined in major constitutional and legal traditions. In France, the *Déclaration des droits de l'homme et du citoyen* of 26 August 1789 recognizes property as a "natural and imprescriptible right" (Article 2) and affirms its sacred character (Article 17), permitting expropriation only in cases of proven public necessity and with just compensation. Similarly, Article 64 of the 2019 Egyptian Constitution guarantees private property and inheritance, restricting expropriation to cases of public interest with advance compensation. The Algerian Constitution of 2020 mirrors this approach in Article 60, confirming the sanctity of property and allowing expropriation only under law and with equitable compensation. Complementing this, the Algerian Penal Code criminalizes unlawful infringements on property, as reaffirmed by the jurisprudence of the Supreme Court (Article 386).

Judicial practice further illustrates the tension between private rights and public necessity. For instance, the French *Conseil d'État* rejected an appeal to compel the Paris Municipality to issue a building permit, reasoning that public safety concerns justified the refusal. The ruling emphasized that a building permit functions as a control measure restricting private ownership in order to preserve public health and security. Where issuing a permit would constitute clear harm to the public interest, refusal becomes a lawful exercise of administrative oversight.

II. Building Permit Procedures

Building permits constitute one of the most effective tools of administrative oversight in the urban planning domain. Their purpose extends beyond mere authorization; they serve as instruments to ensure adherence to planning regulations, preserve the aesthetic and cultural identity of cities, and prevent random or uncontrolled construction. The Algerian legislator, aligning with comparative legal systems, has established a structured administrative process requiring applicants to submit a formal request containing specific data and documentation. This process is designed to balance private initiative with public oversight and is governed by strict timelines and technical requirements set forth in legislative texts.

1. Building Permit Procedures in France

In France, the legal framework for building permits is highly codified, with explicit rules regarding the content of applications, the authority competent to review them, the nature of administrative decisions, and the technical standards that must be satisfied. The *Code de l'urbanisme* provides exhaustive detail, limiting the discretion of the administration in order to guarantee transparency and fairness in the permit process.

A. Content of the Application

Article R-431-4 of Law No. 1527/2005 (dated 12 August 2005) outlines the fundamental requirements for a building permit application. These include:

1. The general information stipulated in Articles R-431-5 to R-431-12.
2. The supporting documents specified in Articles R-431-13 to R-431-31.
3. Additional requirements listed in Articles R-431-34 to R-431-34-01.
4. Procedural conditions identified in Articles R-423-19 to R-423-22.

Together, these provisions exhaustively enumerate the documents necessary for submission, thereby preventing authorities from demanding materials beyond what is prescribed in the *Code de l'urbanisme*. For example, Article R-431-5 explicitly confirms that only the listed documents may be requested, safeguarding applicants from arbitrary administrative burdens.

Key requirements include:

- **Applicant Identification:** Information confirming the legal status of the applicant (owner, tenant, or corporate entity), date of birth, and identification number (*SIRET*) in the case of legal persons. Supporting documentation must include contracts, property deeds, or land records.
- **Architectural Representation:** Article R-431-01 stipulates that applications may only be considered valid if an architect has been retained to prepare the project (*projet architectural*). The architect must sign all drawings, plans, and written submissions included in the dossier, thereby ensuring professional accountability and compliance with architectural standards.

B. Submitting the Application and the Competent Authority

Under French law, the municipality is the competent administrative body entrusted with receiving and processing applications for building permits. Applications must be submitted by the owner or their legal representative. In cases of joint ownership, any co-owner may file the application on behalf of the group. Article R-432-02 of the *Code de l'urbanisme* requires that applications be submitted in four copies; this number may be extended depending on the nature of the project. For example, five copies are required if the permit involves lands adjacent to military areas under the jurisdiction of the Ministry of Defense, or when the project is subject to the opinion of the *Architectes des Bâtiments de France (ABF)*. In environmentally sensitive zones, the number increases to six copies in accordance with Article L-331-02 of Environmental Law No. 914/2000 (18 September 2000).

Upon submission, the mayor delivers an official receipt to the applicant, specifying the registration number, date of submission, and the expected date of decision. The law also obliges municipalities to notify applicants within one month of any deficiencies in the submitted file. This obligation, stipulated in Articles R-431 and R-431-05, aims to prevent administrative abuse by prohibiting authorities from imposing additional, non-statutory requirements.

Although manual submission remains legally valid, since 2018 municipalities have progressively adopted electronic submission technologies under the *ELAN* reform. This system enables applicants to file complete electronic dossiers meeting the same legal specifications as paper submissions, thereby streamlining communication between administrations and citizens.

C. Examination and Decision on the Application

The French legislator has established strict deadlines for administrative review. Article R-423-23 of the *Code de l'urbanisme* grants the competent authority a maximum of two months to decide on residential applications and one month for applications relating to service buildings. These deadlines may be extended by an additional month in specific cases, such as when the proposed site is located on archaeologically significant land, near historical monuments, or in areas subject to environmental or agricultural preservation. Article L-123-19-02 explicitly requires consultation with specialized committees in such circumstances.

The review process concludes with either approval or rejection of the application. The decision is communicated to the applicant by registered letter with acknowledgment of receipt, ordinary registered mail, or electronically via the *ELAN* system. In the event of approval, the permit specifies both the conditions of construction and the timeframe for which the authorization remains valid. Where the decision falls within the jurisdiction of the mayor or the president of an inter-municipal cooperation body, the law further requires notification to the prefecture in accordance with Article R-423-06 of the *Code des collectivités territoriales*.

2. Procedures for Granting Building Permits in Egypt

In Egypt, the procedures for obtaining building permits are codified under Law No. 410 of 2021, which complements constitutional guarantees established in Article 64 of the 2019 Constitution. This constitutional provision safeguards private property and explicitly stipulates that expropriation may occur only for public

interest purposes and with prior fair compensation. Accordingly, the building permit system functions as both an expression of the constitutional right to ownership and as a tool of administrative control designed to reconcile private construction initiatives with broader urban planning objectives.

A. Content of the Application

Article 112 bis (a), introduced by Ministerial Resolution No. 410 of 2021, specifies the mandatory content of building permit applications. Applications must be filed at the competent *technology center* by a licensed engineer or engineering office, using standardized forms issued under the executive regulations of the Building Law and validated by the Engineers Syndicate.

The application must include, under penalty of non-acceptance, the following documents:

1. Proof of property ownership and a copy of the applicant's national ID card, or an official power of attorney authorizing the engineer to act on behalf of the owner.
2. A copy of the engineering record of the responsible engineer or office, including the calculated project cost, documented using official regulatory forms.
3. A certificate of eligibility for the works to be undertaken, signed by the responsible engineer or office.
4. A planning certificate indicating site eligibility, together with three copies of the approved engineering drawings and a spatial planning certificate.
5. Proof of payment for the engineering stamp issued by the Engineers Syndicate, along with a copy of the Syndicate-approved consultant certificate for any reports or drawings.

For projects subject to insurance under Article 46 of the Building Law, additional documentation is required:

6. A copy of construction drawings approved by the Egyptian Society for Civil Liability Insurance for Construction Risks, together with the consultant's certificate.
7. A geotechnical investigation report prepared by a consulting engineer, a structural safety report for neighboring properties, and a financial statement estimating overall project costs.

B. Filing the Application and the Competent Authority in Egypt

In Egypt, the legislator has entrusted *Technology Centers* with the responsibility of receiving building permit applications. These centers act as the administrative gateway, ensuring both formal and technical compliance. Upon submission, the application file is registered, assigned a serial number, and accompanied by an official receipt indicating the documents and data received. Within two days, the Technology Center forwards the file to the competent administrative units for further review.

Each application must be submitted in three copies, and its contents are formally inventoried through meeting minutes that confirm the integrity of the submitted documents and drawings. Once the application is verified, the Technology Center issues a preliminary certificate of eligibility for building works, stamped with the official seal. This certificate serves as a provisional authorization until the application is examined by the competent planning and organization committees. The legislator requires that the preliminary license be processed within a maximum period of one month by the relevant civilian or military planning authority.

C. Examination and Decision on the Application in Egypt

After review, the Technology Center issues a decision approving or rejecting the application. If approved, the decision is accompanied by the original drawings bearing the official stamp of the examining authority. The applicant or their authorized engineer must then pay the prescribed taxes before receiving the final permit.

Where no explicit decision is issued within thirty days, the legislator recognizes *implicit approval*. In such cases, the applicant must notify the regionally competent governor through a judicial officer of their intention to

commence construction. However, works may not begin until fifteen days after such notification, ensuring adequate time for administrative review.

Article 117 of Law No. 410 of 2021 stipulates additional safeguards: the permit is delivered only after the applicant signs the official form, and the supervising engineer or contractor must also endorse the decision. Failure to comply with these requirements results in the cancellation of the permit. This mechanism underscores the legislator's concern for procedural rigor and accountability in the construction process.

3. Procedures for Granting Building Permits in Algeria

The Algerian legislator, through Executive Decree No. 15/19 of 25 January 2015 (as amended by Decree No. 20/342 of 22 November 2020), has established a detailed framework for building permit procedures. The permit is conceived as an administrative decision authorizing the lawful exercise of ownership rights through construction. The process consists of several stages: the content of the application, the identification of the competent authority, and the examination and adjudication of the request.

A. Content of the Application

Applicants must submit:

1. A completed building permit application form prepared by the competent authority.
2. A decision authorizing the establishment or expansion of industrial or commercial establishments, where applicable.
3. A certificate of land usability, accompanied by a site plan, block plan, and architectural designs on approved scales (1:50, 1:10, or 1:20).
4. A memorandum containing a descriptive and financial inventory of the works, along with a civil engineering feasibility study.

Eligible applicants include landowners, their legally empowered agents, and tenants holding notarized and registered lease contracts. Ownership is defined broadly to encompass individuals holding registered titles, beneficiaries of state-supported housing, and holders of development certificates under Law No. 90/25 of 18 November 1990.

B. Competent Authorities

The competence to issue building permits is distributed across three levels:

- **The Mayor:** Article 48 of Decree No. 15/19 designates the president of the municipal people's council as the primary authority to grant building permits, including demolition and restoration permits. The mayor may also issue permits outside municipal plans for state-owned lands, subject to binding approval from the governor.
- **The Governor:** Under Article 49, governors are competent to issue permits for public facilities and collective housing projects exceeding 200,000 units but below 600,000 units.
- **The Minister of Urban Planning:** Article 49, paragraph 7, reserves to the Minister the authority to license projects of national interest, such as collective housing exceeding 600,000 units, as well as facilities constructed for foreign governments, international organizations, or concessionary energy institutions.

C. Examination and Adjudication of the Application

Article 48 of Decree No. 15/19 prescribes that municipal applications be processed through a *single-window* system. The mayor must transmit the file within eight days to the relevant advisory services for review. These services, represented at the municipal level, are required to provide their opinion within fifteen days.

Where applications fall under the jurisdiction of governors or ministers, the municipal council forwards seven copies of the file, along with its opinion, to the state-level urban planning services. These agencies must seek consultation from specialized bodies and render a decision within twenty days.

D. Possible Outcomes

1. **Approval:** Article 51 requires notification of approval within twenty days of submission. The permit authorizes construction strictly in accordance with approved designs and for a legally specified period.
2. **Rejection:** Article 50 requires that rejections be formally justified, allowing applicants to contest the decision before administrative courts. Competence lies with municipal administrative courts or, in ministerial cases, the Administrative Court of Appeal in Algiers, pursuant to Articles 800 et seq. of the Code of Civil and Administrative Procedure No. 09/08.
3. **Postponement:** Article 51, paragraph 2, authorizes postponement where supplementary documents are required, or where land is situated in special zones. The postponement period may not exceed one year and serves as a precautionary measure against administrative liability.
4. **Administrative Silence:** While the decree does not explicitly address administrative silence, legal commentators largely interpret prolonged inaction as an implicit rejection. This interpretation allows judicial oversight of administrative inaction, ensuring that silence does not serve as a means of arbitrary obstruction.

Conclusion

The findings of this study reaffirm the fundamental principle that administrative authorities, in exercising their duties, act primarily to safeguard the public interest. This responsibility necessarily empowers them to impose restrictions on certain individual rights and freedoms. However, such authority cannot be absolute; it must be bounded by legal checks and balances to ensure that administrative actions remain within legitimate limits. When administrative measures exceed these boundaries, they are rendered invalid and subject to annulment.

Ensuring the legality of administrative actions requires the establishment of effective oversight mechanisms. Across comparative legal systems, four principal modes of control are recognized: administrative oversight, political oversight, independent institutional oversight, and judicial oversight. Among these, administrative oversight remains the most frequently applied, as it allows administrations to regulate themselves and to rectify acts tainted by illegality through withdrawal, amendment, or annulment. This form of oversight also enhances accountability by fostering greater diligence among public officials, who are continuously aware of supervisory control exercised by their superiors.

Despite these safeguards, the study identifies a critical challenge in the context of building permits: the issue of *administrative silence*. Leaving such silence open to judicial interpretation risks undermining individual rights, particularly property rights that hold a constitutionally enshrined status in Algeria, France, and Egypt. Judicial practice, while pragmatic and fact-based, often lacks the flexibility of legislative clarity and may inadvertently restrict freedoms through restrictive interpretations. Consequently, the absence of explicit legislative regulation on the consequences of administrative silence in building permit procedures represents a significant shortcoming.

Therefore, this research recommends that legislators adopt reforms to urban planning legislation that explicitly address administrative silence, thereby closing gaps that could compromise the balance between public interest and private rights. Such amendments would not only reinforce legal certainty but also protect the constitutional sanctity of property, ensuring that administrative powers are exercised within a clear and equitable legal framework.

Acknowledgement

The author extends sincere appreciation to the Mediterranean Laboratory for Legal Studies at the University Centre of Maghnia for its institutional support and provision of academic resources essential to the completion of

this study. The author also wishes to thank colleagues specializing in administrative and urban law for their valuable feedback and comparative insights, which significantly enriched the analysis.

Conflict of Interest Statement

The author declares that there are no conflicts of interest associated with this research. The study was conducted independently, without financial, institutional, or personal influences that could have affected its objectivity, integrity, or conclusions.

References

1. Ahmed, M. (2002). *Building permits*. Cairo: Dar Al Nahda Al Arabiya.
2. Ashrafova Allahverdi, I., Asadov, A. A., Nagiyeva Yasin, G., Heydarova Abulfaz, N., Mammadova Jafer, M., & Aliyarova Namig, N. (2025). Integrative Approach to Teaching Foreign Languages. Universidad y Sociedad. Universidad y Sociedad, 17(3). e5229.
3. Arnie, C. (2002). The permission of construire: The exemple of Saint-Étienne. *Journal of Archives*, (190/191). Les Archives des Architects.
4. Dear, Z. (2005, June). The legal system of building permits in Algerian legislation. *Journal of Human Sciences*, University of Mohamed Khider, Biskra, Algeria, (8).
5. Conseil d'État. (1963, January 22). *Association nationale et de la meunerie*. *A.J.D.A.* (France).
6. Decision of the Supreme Court of Algeria. (2010, July 10). *Supreme Court Magazine*, (1), 2012. Retrieved from http://www.coursupreme.dz
7. Executive Decree No. 15-19 of 25 January 2015, determining the procedures for preparing and delivering construction contracts. *Official Journal of Algeria*, No. 07 (2015), amended and supplemented by Decree No. 20-342 of 22 November 2020, *Official Journal of Algeria*, No. 71 (2020).
8. Law No. 2018-1021 of 23 November 2018 on the evolution of housing, development and digital technology. *Journal officiel de la République française*, No. 272 (24 November 2018).
9. Law No. 119 of 2008, amended by Law No. 23 of 2015, relating to building provisions. *Official Journal of Algeria*, No. 16 bis (a) (20 April 2015).
10. Ricared, M. (2007). *Construire* (5th ed.). Paris: Le Moniteur.
11. Boutriki, M. (2009). Building permit disputes between the jurisdiction of administrative and ordinary courts. *Al-Amlak Magazine* (Morocco), (6).
12. Othman, M. J. J. (1992). *Administrative licensing* (Doctoral dissertation, Faculty of Law, Ain Shams University).
13. Ruling of the Supreme Constitutional Court of Egypt. (2016, April 2). Case No. 138, Year 34 Q. *Constitutional Court Magazine*, (2). Retrieved from http://www.sccourt.gov.eg
14. Urban Planning Law No. 02-77 of 1977 relating to urban planning and architecture. *M.S.*
15. Law No. 20-77 of 3 January 1977 relating to urban planning and architecture. *Official Journal of Algeria*, No. 56 (4 January 1977). (Introduced condition absent from Decree No. 54-766 of 26 July 1954, *Official Journal of Algeria*, No. 54, 1954).

RESEARCH ARTICLE

Evolution of the American School of International Competitiveness of Nations

Professor, Doctor of Economics, Chief Researcher

Valeriy Leonidovich Abramov

Institute of International Economic Relations Research, Department of World Economy and International Business,Financial University under the Government of the Russian Federation, Moscow, Russia

Russian Federation

E-mail: valabr@yandex.ru

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords International competitiveness, United States, global governance, multinational corporations, protectionism, economic sanctions, international economic relations.

Abstract

This article provides a comprehensive examination of the theoretical foundations and practical applications of the American school of thought on the international competitiveness of nations. The study traces the evolution of U.S. approaches to maintaining global leadership, beginning with classical concepts of free market dominance and progressing toward modern strategies that combine innovation, technological superiority, and geopolitical influence. Particular attention is given to the interaction between government policies, multinational corporations, and academic frameworks that together form the intellectual core of the American school. The analysis highlights how mechanisms of protectionism, economic sanctions, and global governance are strategically applied to safeguard U.S. national interests while simultaneously projecting power across international economic relations. Moreover, the research underscores the adaptability of the American school in responding to shifting global challenges, from post-war reconstruction to the digital economy and the current multipolar system. Based on this comparative analysis, conclusions are drawn regarding the implications for other economies, with an emphasis on lessons applicable to Russia's pursuit of sustainable competitiveness in the contemporary world order. The article formulates practical proposals for enhancing the performance of Russian economic entities through the adoption of innovative strategies, institutional modernization, and integration into new models of international cooperation.

Actuality. The relevance of this study is determined by the growing importance of national competitiveness as a key factor in global economic security and political influence. In the 21st century, the ability of states to compete internationally depends not only on natural resources or industrial capacity but increasingly on innovation systems, financial institutions, and global economic strategies. The American school of international competitiveness represents one of the most influential intellectual traditions shaping economic policy worldwide. Its doctrines and practices have played a decisive role in the construction of the U.S. leadership model, the establishment of global governance mechanisms, and the regulation of transnational economic flows. In the current context of geopolitical confrontation, rising protectionism, and the fragmentation of international markets, an in-depth understanding of the evolution of this school is of particular value. For Russia and other emerging economies, the analysis offers both theoretical insights and practical recommendations for building resilient economic systems capable of competing effectively within the multipolar world order. Thus, the article contributes to the global debate on competitiveness by clarifying the strategic tools employed by the United States and by formulating proposals for alternative development paths in international economic relations.

Citation. Abramov V.L. (2025). Evolution of the American School of International Competitiveness of Nations. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 283–286. https://doi.org/10.56352/sei/8.11.21

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.03.2025	Accepted: 01.06.2025	Published: 27.08.2025 (available online)

Introduction

Research aimed at improving theoretical concepts of forming international competitiveness of actors in international economic relations (IER) is currently a relevant and promising scientific direction. It has been most thoroughly developed by representatives of the American school, who serve as advocates of a unipolar world order. However, only a limited number of scholarly works reveal their evolution under conditions of transition toward a polycentric global system.

This article analyzes the multidimensionality of international competitiveness in the American school using a systems approach, which discloses interaction and interconnection at macro-, meso-, and micro-level subsystems of international economic relations (IER) within today's geopolitical and geo-economic realities (Abramov & Prokofyev, 2021; Ryazanov, 2021).

Porter's Concept and the "Competitive Diamond"

One of the most internationally recognized theoretical frameworks is the concept of national economic competitiveness (NEC) developed by Michael Porter, a prominent representative of the American school. This concept, based on research at Harvard University, synthesizes earlier theoretical approaches, beginning with Adam Smith, the founder of economic theory (Tong-song, 2013).

Porter's conceptual contribution was the formulation of the "competitive diamond," which integrates four interrelated determinants of competitive advantage:

1. **Factor conditions**,
2. **Demand conditions (domestic and external)**,
3. **Related and supporting industries**, and
4. **Firm strategy, structure, and rivalry**, which increasingly rely on flexible network structures under globalization (Porter, 1993).

According to this framework, high national competitiveness is achieved by progressing through four stages of economic development: factor-driven, investment-driven, innovation-driven, and wealth-driven. Countries dependent solely on resource exports may experience "Dutch disease," losing competitiveness in global markets. Porter's central conclusion is that *firms, not nations, compete in international markets*, and therefore the role of a country is to provide conditions for firms to sustain competitive advantage (Porter, 1993).

The Role of Multinational Corporations (MNCs) and Clusters

Porter later extended his concept to the activities of multinational corporations (MNCs) as key actors in IER. He emphasized the role of clusters in achieving U.S. competitiveness, conducting econometric analyses of regional development in American states, and justifying their growing contribution to export potential (Porter, 2003).

The original American model, rooted in liberal and monetarist approaches, limited the role of the state to indirect regulation. Government involvement in competitiveness was considered inefficient, leaving the main responsibility to market forces and MNCs.

Reconsideration of Government's Role

Today, as the U.S. loses its hegemonic status in a unipolar world, the Porterian view of minimal state intervention has been radically revised. Harvard Business School's report *U.S. Competitiveness: A Matter of National Security* stresses that competitiveness must be assessed beyond the simplified "competitive diamond" (Disparte, 2013).

Weak government capacity to create jobs, inadequate workforce training in STEM fields, and excessive shareholder-driven behavior of MNCs—often involving tax avoidance and offshoring—are now considered key threats to U.S. competitiveness.

New Concepts: National Competitiveness in the 21st Century

A more comprehensive approach was presented in *The Determinants of National Competitiveness* (Delgado et al., 2012). This framework emphasizes the U.S. advantage from the dollar's role as a global reserve currency, enabling influence over global investment attractiveness while supporting American MNCs' expansion.

In practice, this has been reflected in U.S. neo-protectionist policies—trade wars, sanctions, and geopolitical pressure—aimed at maintaining global leadership. International organizations (IMF, World Bank, OECD) serve as platforms for promoting and legitimizing these models through global competitiveness indices.

Soft Power and the Institutionalization of Competitiveness

The American school also uses *soft power* to entrench its ideology globally:

- Educational programs and standards,
- Scholarships for foreign students,
- Training managerial elites for global corporations.

Harvard Business School remains central, conducting annual monitoring and publishing competitiveness reports. Despite a decade of growth, these reports highlight persistent structural failures in the U.S. political system that hinder significant progress (Porter et al., 2019).

Implications for Russia

American competitiveness concepts reinforce unipolarity, reducing states' roles in favor of MNCs. Developing countries are pressured into resource dependency and technological import reliance, which benefits global corporations. For Russia, which faces unprecedented sanctions and hybrid trade wars, these frameworks expose the dangers of liberal economic policies. A radical revision of economic and structural strategies is required, prioritizing:

- **Diversification and reindustrialization**,
- **Technological independence**,
- **State-led protectionism**,
- **Support for domestic corporations and innovation ecosystems**.

Conclusion

The American school of international competitiveness is grounded in globalization under U.S. dominance, legitimizing the power of MNCs as primary drivers of competitiveness. Through global institutions and soft power, it imposes models that diminish national sovereignty.

For Russia, adapting these theories requires rejecting excessive liberalization, strengthening state regulation, and reindustrializing on the basis of advanced technological paradigms to secure economic sovereignty.

Acknowledgement

The author expresses sincere gratitude to the colleagues at the Institute of International Economic Relations Research and the Department of World Economy and International Business at the Financial University under the Government of the Russian Federation for their intellectual support and constructive discussions. Their insights and critical feedback significantly enriched the analysis presented in this article.

Conflict of Interest

The author declares that there is no conflict of interest regarding the publication of this article. All conclusions and recommendations were developed independently and reflect solely the scholarly perspective of the author.

References

1. Abramov, V. L., & Prokofyev, V. A. (2021). Sustainable competitive advantages of countries in the context of the evolution of theoretical approaches to world trade development. *Voprosy Politologii, 11*(75), 3213–3224.
2. Disparte, D. (2013). *U.S. Competitiveness: A matter of national security*. American Security Project. https://www.americansecurityproject.org/u-s-competitiveness-a-matter-of-nationalsecurity/
3. Asadov, A. A.(2025). Comparative literary pedagogy: analyzing the presence of world literature in Azerbaijani school textbooks. *Science, Education and Innovations in the Context of Modern Problems*, *8*(3), 512-527.
4. Asadov, A. (2017). New America (USA) prose and Azerbaijani literary.
5. Delgado, M., Ketels, C., Porter, M. E., & Stern, S. (2012). *The determinants of national competitiveness* (NBER Working Paper 18249). National Bureau of Economic Research. https://doi.org/10.3386/w18249
6. Porter, M. E. (1993). *The competitive advantage of nations* (V. D. Shchetinin, Pref.). Moscow: Mezhdunarodnye Otnosheniya.
7. Porter, M. E. (2003). The economic performance of regions. *Regional Studies, 37*(6-7), 549–578.
8. Porter, M. E., Rivkin, J. W., & others. (2019). *A recovery squandered*. Harvard Business School. https://www.hbs.edu/competitiveness/Pages/default.aspx
9. Ryazanov, A. A. (2021). Modern scientific approaches to managing competitiveness of socio-economic systems. *Ekonomika i Predprinimatelstvo, 1*, 610–613.
10. Tong-song, C. (2013). *From Adam Smith to Michael Porter: Evolution of competitiveness theory*. Singapore: World Scientific.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Implications of South Sudan's Secession on Arab National Security – Egypt as a Model

Lounis Khobzaoui
Phd
Faculty of Political Science and International Relations, University of Algiers 3
Algeria
E-mail: khobzaoui.lounis@univ-alger3.dz ; Orcid: 0009-0003-7497-0341

Djelloul Laggoune
Professor
Faculty of Political Science and International Relations, University of Algiers 3
Algeria
E-mail: Laggojel@yahoo.com ; Orcid: 0009-0003-5697-9166

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Secession of South Sudan, Arab National Security, Egyptian Water Security.

Abstract
The secession of South Sudan from the North in 2011 represented a historical turning point whose repercussions were not limited to Sudan's internal affairs but extended to cast their shadows on Arab national security in general, and on Egypt in particular. Sudan has long been, due to its strategic geographical location and its historical and cultural ties with the Arab sphere, a strategic depth for Egypt and a gateway to the Horn of Africa.
Therefore, the fragmentation of Sudan did not only create a political vacuum but also raised a set of security, economic, and political challenges that require in-depth analysis to understand their dimensions and their impact on the vital interests of Arab states. This article aims to review and analyze the implications of South Sudan's secession on Arab national security, focusing on Egypt as a case study, by examining the direct and indirect repercussions on its water security, borders, and regional stability.

Citation. Khobzaoui L., Laggoune Dj. (2025). The Implications of South Sudan's Secession on Arab National Security – Egypt as a Model. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 287–299. https://doi.org/10.56352/sei/8.11.22

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 01.01.2025 | Accepted: 04.06.2025 | Published: 31.08.2025 (available online)

Introduction

Despite Southerners obtaining the right to self-determination through the referendum held in January 2011, this did not put an end to Sudan's problems. On the contrary, the manifestations of secession began to reflect negatively not only on Sudan but also on its Arab and African neighbors, who share intertwined borders as well as ethnic and tribal overlaps with it. Furthermore, some movements and ethnic groups in neighboring states, inspired by South Sudan, have also demanded secession, which may create a state of political instability that will, in turn, affect Sudan's relations with its Arab and African surroundings.

The secession of South Sudan created a new situation with economic, political, and security dimensions. This secession has had repercussions, consequences, and risks at various levels, the most important being its implications for Arab national security in general and Egyptian national security in particular. This is what the present article aims to address.

Significance of the Study

The importance of this study lies in highlighting the features of the threats facing Arab national security in general and Egyptian national security in particular as a result of South Sudan's secession. It also emphasizes the necessity of functional integration among the units of the Arab regional system, since Egyptian national security does not conflict with Arab national security but rather complements it.

Research Problem

The research problem revolves around the following main question:
What are the implications of South Sudan's secession for Arab national security in general, and for Egyptian national security in particular?

Research Questions

From this main issue emerge several sub-questions, including:

- What is Arab national security?
- What are the threats to Egyptian national security following the secession of South Sudan?
- Could Egypt's share of Nile waters be affected by the secession of South Sudan?

Hypotheses

In order to answer these questions, the following hypotheses are proposed:

- The secession of South Sudan represents a new phase in the threats facing Arab national security.
- There is a complementary and interdependent relationship between Egyptian national security and Arab national security.
- The creation of the state of South Sudan has added a new actor to the Nile Basin system, threatening the water interests of both Sudan and Egypt.

Methodology of the Study

The methodologies and tools used in analyzing this topic are as follows:

- **Historical Method:** This was used to study, analyze, and trace the repercussions of South Sudan's secession on Arab national security, with particular focus on Egyptian national security.

Descriptive Method: This method relies on description, which is the essential feature of most scientific research, through describing the phenomenon or subject under study and identifying its characteristics [1]and we relied on this method because it provides us with a general descriptive picture of the repercussions of secession on Arab national security and Egyptian national security.

Case Study Method:

The case study method is considered one of the most important approaches in the humanities and social sciences, as it focuses on a specific phenomenon while relying on both material and moral foundations. Its purpose is to comprehensively address the subject under study and to uncover its underlying dimensions. This method examines the details in relation to the whole that encompasses them, based on the idea that particulars are merely one aspect

or manifestation of the overall reality[2]. **We will address** the repercussions of South Sudan's secession on Arab national security in general, with a particular focus on Egyptian national security as a model or case study.

Structure of the Study
This article has been divided, in line with the study requirements, into several key sections:

- **Section One:** Security and National Security (Concept and Characteristics).
  - Arab National Security (definition, dimensions, levels).
- **Section Two:** The repercussions of South Sudan's secession on Egyptian national security.
- **Section Three:** Egyptian water security.

Thus, we have structured our article into these main axes. In Section One, we address the nature of national security by presenting different definitions of the concept. Section Two, titled *The Repercussions of South Sudan's Secession on Egyptian National Security*, discusses the direct threats posed to Egypt's national security. This focus on Egypt is not incidental but is based on several considerations, foremost among them its geographical proximity and the interconnectedness of Egyptian national security with Sudanese national security on the African level. Given the wide-ranging and multifaceted nature of Egyptian national security, we will concentrate particularly on the issue of Egyptian water security.

Section One: Security and National Security (Concept and Characteristics)

To begin, it is essential to define *security*, *national security*, and *Arab national security*.

First:
The concept of security is among the most complex concepts addressed in scientific analysis, due to its relative, changing, and multidimensional nature, involving various levels. It faces both direct and indirect challenges from different sources, varying in degree, type, scope, and timing whether related to the security of the individual, the state, the regional system, or the international order. It is one of the central concepts in the field of international relations, which has been marked by great ambiguity since its emergence as an independent academic discipline after World War II.

The study of national security cannot be fully understood or interpreted without first clarifying the general concept of security and then analyzing the notion of national security.

The meanings of *security*, both linguistically and terminologically, converge on the idea that security entails achieving calm, reassurance, and stability at the level of the individual, the community, and the nation. It stands in opposition to fear, and is essentially equivalent to the absence of threat or danger[3].

Henry Kissinger defines security as: *"Any action through which society seeks to achieve its right to survival."* He also describes it as *"the ability to free oneself from a major threat to the higher individual and collective values, through all possible means to preserve at least the right to survival,"* or as *"the absence of threat to fundamental values[4]."*

Second:
The concept of national security is relatively modern in political science, and for this reason, it remains one of the most ambiguous concepts. It has not yet crystallized into a fully developed field of political science governed by the rules of epistemology—starting from formulating hypotheses, defining appropriate research methods, selecting scientific verification tools, establishing rules of proof and refutation, and eventually reaching a general theory and a law that governs the phenomenon of national security.

The term *national security* emerged as a result of the rise of the nation-state in the 16th century AD. It is defined as the state's ability to protect its territory and its fundamental and essential values from external threats, especially

military ones. Ensuring the protection of the state's territory against foreign aggression, and safeguarding its citizens from attempts to harm them, their property, beliefs, and values, constitute its core. With the evolution of the concept of state capacity, the notion of national security expanded to encompass the state's comprehensive ability to protect its values and interests from both external and internal threats.

National security has political, economic, social, military, ideological, and geographical dimensions, each with its own characteristics that demonstrate their interconnection and complementarity.

A significant number of Arab scholars and thinkers have addressed the concept of *Arab national security*. Among these, Amin Houidi defined national security as: *"A set of comprehensive measures taken by the state, within the limits of its capacity, to preserve its entity and its interests in the present and the future, while taking into account international variables.*[5]*"*

Hamed Rabie emphasizes that the concept of national security, in its essence, is a **military concept** rooted in the defensive characteristics of the national territory. However, in its theoretical formulation, it evolves to establish rules for collective and leadership behavior with a **political dimension** that is not limited to internal dealings [6].

National security is a comprehensive concept whose threats are not confined to the presence of an external military danger, nor is its protection limited merely to increasing the state's military capabilities, as was commonly assumed in the traditional view of the concept.

Third:
Arab National Security is the ability of the Arab nation, collectively, to defend itself and its rights, to safeguard its independence and sovereignty over its territories against any external aggression, and to confront challenges and risks by developing Arab capacities and resources in all fields within the framework of comprehensive Arab unity. This ensures a secure future for its people and enables them to contribute to the building of human civilization[7].

Among the clearest definitions of **Arab national security** is that proposed by the General Secretariat of the Arab League in its study on Arab security. It defined it as: *"The ability of the Arab nation to defend its security and rights, safeguard its independence and sovereignty over its territories, and develop Arab capacities and resources in all political, economic, and social fields, relying on military and diplomatic power, while taking into consideration the national security needs of each state, which in turn affect Arab national security.*[8]*"*

In brief, national security can be defined as the safeguarding of the state's borders, interests, values, and culture from looming threats. These threats may be external—emanating from neighboring states or major powers or internal, such as threats to the state's legitimate system or the safety of citizens caused by the loss of one of the core elements of security: military strength, economic development, and political stability.

There are numerous internal and external dangers and challenges threatening Arab national security, linked to the resources, wealth, and natural characteristics of the Arab world. These factors have made the Arab region of immense economic, political, strategic, and civilizational importance.

The security characteristics of the Arab homeland have made it a focal point of global attention, especially from major powers, due to its abundant material and human resources, as well as its unique geographical position that grants it a significant geostrategic role in the global order. Furthermore, cultural, social, and religious bonds tie the peoples of the Arab world together, rendering it an indivisible unit. Although it is based on the concept of the nation-state, these bonds unify its peoples like a single body: if one part suffers, the rest responds in solidarity.

From the perspective of national security, South Sudan is of great importance because of its direct connection to Arab security in general, and its tangible impact on the vital interests of some influential Arab states in the region directly on Sudan, and indirectly on Egypt.

Thus, the repercussions and consequences of South Sudan's secession will be profound and immediate, affecting both the near and distant neighbors. In fact, the secession of South Sudan can be likened to a fragmentation bomb whose shrapnel will inevitably strike all nearby states.

Section Two: The Repercussions of South Sudan's Secession on Egyptian National Security

First: The Importance of Sudan in the Equation of Egyptian National Security

Sudan is considered Egypt's backyard and its southern front, which Egypt constantly seeks to keep secure. Dr.

Kamal Amer stated that national security is linked to the comprehensive power of the state, which is built on several important elements, including the **geopolitical factor**, represented in the shape of the state and its geographical location. From this perspective arises the vital importance of Sudan, which shares with Egypt a border of approximately **1,273 km** [9].

Sudan lies within the sphere of Egypt's **direct national security**, given the shared borders, geographical proximity, and unity of destiny between the two countries. The Egyptian-Sudanese border extends approximately **1,273 km**, with Sudan representing Egypt's southern strategic depth. Therefore, Sudan's security and stability are integral parts of Egypt's national security.

The importance of Sudan to Egypt also stems from the intertwining of the two countries' relations across multiple shared issues that require constant coordination. In addition to the multidimensional bilateral relations, there are numerous regional files and issues for which the coordination of both countries' positions is vital to the national security of both states, their peoples, the Arab nation, the African continent, and the entire region. Chief among these is, of course, the issue of **Nile waters and the Grand Ethiopian Renaissance Dam (GERD) crisis**.

On January 1, 2020, Sudan's transitional Prime Minister, Dr. Abdalla Hamdok, declared that Sudan occupies a key position in the GERD issue and would not allow any harm to befall Egypt. He stressed Sudan's awareness of the importance of the Nile River, thereby underlining that Sudan's stance on the dam carries great significance for **Egypt's water security**[10].

There are also other areas of cooperation between Egypt and Sudan, such as the issues of **security and stability in the Red Sea Basin and the Horn of Africa**, as well as coordination on African affairs whether through the African Union and other continental and regional organizations, or in dealing with influential issues such as **combating terrorism and extremism**, among others.

The importance of Sudan in the equation of Egyptian national security is further reinforced by what Sudanese journalist Rajab stated in an exclusive interview with *Sputnik* on January 18, 2018: that all attempts to sow discord between Egypt and Sudan will fail, because the historical roots binding the two countries are deeply entrenched. Regardless of differences, the two ultimately form one entity, each serving as the other's strategic depth, with Egypt considered a gateway of national security for Sudan[11].

Second: The Pillars of Egyptian National Security

These can be summarized as follows:

- **Focus on Sinai:** The defense of Egypt's northeastern borders must be anchored in the Levant, where the first line of defense is located in the far north, the second line in Palestine, and the third line at the Suez Canal. This is why Pharaonic Egypt conducted annual campaigns in the Levant aimed at eliminating any hostile power that could threaten Egyptian national security.
- **Egypt's security begins with Palestine:** The Zionist threat to Egypt originates from there, and therefore confronting it must also begin from that point.
- **The Nile as the lifeline of Egypt:** The centrality of the Nile to Egyptian life necessitates a specific type of cooperative relations with the states where its sources lie in Ethiopia or Central Africa. It is essential to prevent any power from controlling the Nile's sources or from establishing a presence in Sudan that could threaten Egypt's southern belt.
- **The necessity of strategic alliances:** Egypt must ally with one great power against another when needed, without compromising Egyptian sovereignty or domestic affairs. No leadership can afford to ignore the concept of balance of power among the great powers [12].

Egypt's security begins with its Arab identity: Arabism is not a burden on Egypt but rather a security shield for its interests. Egypt can never afford the luxury of isolation or withdrawal into itself, because detaching Egypt from its natural Arab sphere is a sure warning sign of its vulnerability to internal destabilization[13].

Egyptian national security has never, at any point in its history, been in conflict with the concept of Arab national security. On the contrary, overlap, interaction, and cooperation have been the defining features of the relationship between the two.

Security Circles of Egyptian National Security

Egypt's security circles can be identified in three main directions:

1. **The Northern Direction:** Referring to the dangers posed by the Zionist presence in Palestine, and the role of Sinai in Egyptian national security.
2. **The Southern Direction:** Relating to the sources of the Nile River.
3. **The Western Direction.**

In this study, our main focus is on the **southern dimension and the Nile sources**, while also acknowledging the importance of the other directions for a comprehensive understanding of Egyptian national security.

The secession of South Sudan will have **direct negative repercussions on Egypt**. Egypt views this secession as a factor that will lead to the fragmentation of Sudan, a development that will negatively affect Egyptian national security especially concerning Nile water issues, migration, the reduction of trade and employment opportunities, and the spread of small arms and organized crime[14].

The realities of geography, the facts of history, and human ties have imposed a special relationship between Sudan and Egypt, one that perhaps no other two peoples in the region have experienced. There has long been a strong bond between the two brotherly nations, and the Nile will forever remain the eternal link between the Sudanese and Egyptian peoples. Indeed, many families in Aswan trace their roots back to Sudan, reflecting ties of kinship, marriage, and blood.

Sudan represents Egypt's southern strategic depth; thus, Sudan's security and stability are integral parts of Egyptian national security. Egypt's security, in its African depth, is tied to Sudan's security and stability. From this perspective, Egypt's policy toward Sudan gains importance, aiming to preserve Sudan's unity, stability, and cohesion, while also enhancing relations of integration between the two sides.

Egypt's security is organically linked to Sudan's security. If Sudan is stable, Egypt is stable as well. This connection also extends to Egypt's **water security**, which is a cornerstone of its **food security**, and consequently a guarantee of its political independence. Egypt cannot achieve autonomy in political decision-making without attaining self-sufficiency in food, which is in turn linked to water resources. Moreover, Sudan is a country of great importance within the constellation of states forming the **Horn of Africa**, serving as one of the guarantees of security in the Red Sea, the Bab al-Mandeb Strait, and the Gulf of Aden[15].

From a geopolitical and economic perspective, Sudan represents Egypt's southern strategic depth. Current crises and conflicts plaguing Sudan, which increasingly threaten its very existence, have direct repercussions on Egyptian national security. Egypt is, in fact, one of the first countries to be directly affected by developments on its southern borders. The secession of South Sudan carries numerous implications for Egypt, including:

- **Dependence on the Nile:** Egypt relies heavily on the Nile River to sustain its economy, as the Nile constitutes the lifeline of Egypt. With the birth of the state of South Sudan, Egypt will inevitably be affected by the situation in the Nile Basin. This event represents a genuine threat to Egypt's water security, since the newly established South Sudan is likely to exploit and utilize Nile waters to drive its development—supported by the United States and Israel. These two powers may in the future use water as a means of pressure and blackmail against Egypt.
- **Economic burdens from Northern Sudan:** The secession will also impose economic challenges on Egypt, as oil from the disputed Abyei region has become part of South Sudan's share. Moreover, international actors

backing the South are keen on ensuring that Abyei does not fully belong to it, a situation that carries negative consequences for the Egyptian economy[16].

- **Loss of the African market:** The secession of South Sudan provides a favorable platform for American interests to counter Chinese economic expansion in Africa. As a result, African markets will be flooded with Chinese goods arriving from Asia, alongside American–Israeli products manufactured in South Sudan[17].

In reality, Egypt is the biggest loser from the secession process after Sudan, due to the grave implications for both Egyptian and Arab national security. The fragmentation of Sudan into weak mini-states opens the door to foreign intervention and threatens Egypt's security and stability. This is particularly concerning as South Sudan is expected to adopt a non-Arab orientation, one that is likely to be characterized by hostility toward Egypt and opposition to its interests especially regarding its vital water interests in the Nile River. This stems from the longstanding ties between South Sudanese leaders and Israel, ties that are expected to deepen further following South Sudan's independence[18].

Water is an integral part of national security, as it has become one of the fundamental factors for economic growth and a constant concern for all countries of the world. This concern has come to be known as *water security*, which has developed into a security issue with multiple dimensions: economic, geographical, political, and legal.

The economic dimension is evident in the role of water in agriculture, energy, transportation, and industry. Water is, therefore, an existential necessity its absence inevitably means the absence of economic development. Yet economic development itself is one of life's essential requirements, as stated by Allah the Almighty: ("And We made from water every living thing")[19].

Strategists agree that the lack of sufficient water and food in any country constitutes a threat to its national security. If water equals life, then the Nile River is the life of Egypt and the secret of its existence. Hence came Herodotus's famous phrase: *"Egypt is the gift of the Nile."* Undoubtedly, without that river, Egyptian civilization would not have arisen since the dawn of history, nor would it have flourished or advanced.

Axis Three: The Impact on Egyptian National Security through Its Water Lifeline, the Nile River

Water security is considered one of the most important pillars of the national security of any state. The importance of water security emerges as one of the strategic issues directly related to national and collective security, particularly since it touches upon the very existence, life, identity, and sovereignty of peoples. Because water is among the most essential cross-border resources, countries compete to secure sufficient quantities to sustain their development plans. Therefore, nations enact water legislations, treating it as a national asset. In light of continuous population growth, and the consequent need for forward planning in population, agriculture, and other policies closely linked to the water sector, the issue becomes even more critical.

Water Security: The importance of water security lies in the fact that it is one of the fundamental components of the national security of any nation. In today's world, water has become one of the elements of international conflict. The growing imbalance between states that possess water resources and those that are in need of them has led to intensified disputes, giving rise to expressions such as *"blackmail through water"* and *"the use of water as a weapon."*[20]

Water security means preserving the available resources, using them in the best possible way, preventing their pollution, and rationalizing their use in drinking, irrigation, and industry. It also entails striving by all means to search for new water sources, developing them, and enhancing their investment capacities. Water security is no less important than any other form of security; on the contrary, its importance surpasses all others, given that it is possible to produce more food through various agricultural and industrial methods, whereas the possibilities for increasing sources of fresh water remain limited[21].

Military security cannot be achieved by any state without economic security, and economic security cannot be realized without food security, the backbone of which is water. With the broadening of the concept of national security which is no longer confined to military aspects alone but has extended to include food and water security the concept of water national security has emerged as one of the most important dimensions of national security, given its vital role in development and state stability. Consequently, many studies have defined the concept of water security as "the individual's water needs throughout the year," which came to be known as the *water stress index*, i.e., the annual per capita share of renewable fresh water resources used for productive purposes such as agriculture and industry, as well as for domestic consumption.

Water security thus means preserving the available water resources, using them in the best possible manner, preventing their pollution, rationalizing their use in irrigation, industry, and drinking, and striving by all means to search for new water sources, develop them, and enhance their utilization[22].

The interests of Egyptian national security are closely tied to safeguarding and protecting water national security, embodied in the Nile River. These interests can be summarized as follows:

- **Survival**: The Nile represents a primary and fundamental source of Egypt's existence and continuity.
- **Development**: It is the most important source of Egypt's economic development.
- **Stability**: The Nile is the foundation of stability in Egypt.

Sources of Threats to Egyptian Water Security:

The threats to Egyptian water security can be divided as follows:

- **Threats from within the Nile Basin region:**

1. **Ethiopia and the construction of the Grand Ethiopian Renaissance Dam (GERD):** It is worth noting that 33.0% of Ethiopia's territory lies within the geographic boundaries of the Nile Basin, and 11.7% of the Nile Basin's total area is located within Ethiopian land[23].

2- The State of South Sudan:

Since its secession, South Sudan has maintained close relations with the upstream countries, which consistently support it in its disputes with Sudan. Consequently, its position aligns with the upstream states against Egypt and Sudan regarding the Grand Ethiopian Renaissance Dam (GERD), and it supports the Nile Basin countries' framework agreement.

This stance is governed by several influencing factors, most notably:

- The lack of need for water in South Sudan, as nearly **5,000 billion m³** of rainfall occurs within its territory.
- Its need for upstream states' backing and regional support in its disputes with Sudan.
- Its hostility toward Sudan and the contentious issues between them.
- Its strong ties with Israel, which seeks to weaken Egypt's position in the Nile Basin in order to achieve its ambitions of controlling the Nile waters.

The countries of **Kenya, Tanzania, Uganda, Rwanda, and Burundi** refuse to recognize Egypt's historical rights to the Nile waters. They argue that the agreements on which Egypt bases its claims were signed during the colonial era, and they do not acknowledge them. These states seek to **redistribute the Nile waters** and to diminish Egypt's regional standing.

Threats to Egypt's water security from outside the Nile Basin region:

- The role of the United States in supporting Israel, which aims to weaken Egypt's power, using the water issue as a bargaining chip within the framework of other files, foremost among them the reorganization of the Middle East.

The competition between **China and India** with Europe in Africa in the fields of agricultural investment and the implementation of water and agricultural projects, which in turn **increases Ethiopia's demand for water**[25].

Israel follows a policy of **continuous incitement** of Egypt's strategic neighbors to participate in river basins, stirring feelings of injustice caused by what it describes as the unfair distribution of water. This has become evident in the Nile Basin, where Israel uses either its direct assistance or American aid to secure its influence over African countries located in the Nile Basin, such as **Kenya and Rwanda**.

With the escalation of Egypt's crisis with the Nile Basin countries and the disputes over the share of Nile water allocated to Egypt and Sudan, the hidden Israeli role became apparent in inciting the African upstream states to violate the international agreement governing the Nile Basin countries. The water crisis between the upstream African states and the downstream Arab states revealed the **true Israeli ambitions in the waters of the Nile River**.

Given the importance of water in sustaining Israel's presence in the Arab world, and its early realization of this fact, Israel's ambitions in Arab waters—particularly the Nile—date back several centuries. Since then, Israel has shown increasing interest in the Nile Basin countries, believing that the river could serve as a permanent water source for Israel, while at the same time constituting a **threat to Egypt's national security**[26].

Israel seeks to **encircle the Arab Republic of Egypt** by tightening its control over Egypt's southern flank, thereby depriving it of its strategic depth. Through its presence in the **Horn of Africa** and specifically in **South Sudan**, Israel aims to influence Egyptian national security and exert pressure on Egypt through its lifeline, the **Nile River**, which represents one of the most vital natural resources for the Egyptian economy, due to several considerations:

- The Nile River has contributed to the stability of Egyptian life in the Delta and the Valley, where cities and villages have arisen along its banks.
- Egyptians rely on it as a source of **fresh water** for various purposes, including drinking.
- The Nile is an important source of **electricity generation**, as the High Dam is used to produce hydroelectric power.
- Egypt's **industries** depend heavily on the waters of the Nile, and it is also used for inland water transport.
    - Through the Nile, canals have been dug to reclaim parts of the desert and establish new cities.
    - The Nile also hosts **tourist ships** with hotels and restaurants that attract visitors.
    - It is considered one of the key sources for providing **fish wealth**[27].

The major challenge for Egypt lies in its attempt to preserve its share of the Nile waters. In addition to this, the upstream states have repeatedly sought to **reformulate the previous water agreements**. Following the establishment of the State of South Sudan, a new challenge arose for Arab national security: compensating for the quantities of water lost due to the reduction of Sudan's territory. This coincided with the demands of Nile Basin countries to reconsider the **1959 Agreement**, which is a revised version of the **1929 Agreement** signed between Egypt and Sudan during the British colonial era that dominated both countries. It is evident that none of the Nile Basin states were parties to those agreements[28].

The birth of a new state through which the Nile flows represents a real threat to water security, particularly since this state may use the Nile waters for its future industries, which are internationally supported by the United States and Israel. This can be used as a weapon against Egypt and Sudan, leading to the loss of influence over Egypt's position in Africa within international forums, as well as the African market. The establishment of this state also poses a danger to the existing water projects, dams, and canals along the Nile River.

Therefore, it is necessary to avoid perceiving the establishment of South Sudan merely as a solution to the problems and conflicts that plagued Sudan before independence, which might enable the North to rebuild itself after shedding the burden of the South. Such a static perspective contradicts the dynamic reality, especially since the expected conflict boundaries will not remain confined to Sudan's geographic and political borders but will expand in accordance with local, national, regional, and international variables and stimuli[29].

The future of water in Sudan and Egypt, as well as the challenges of potable water and other uses worldwide, in the Middle East, and in the Arab region, will inevitably be affected by the establishment of South Sudan once it resolves its political problems and turns toward development and cooperation with the other Nile Basin states, which are in many respects closer to it than Egypt and Sudan. This will undoubtedly affect the volume of the White Nile's waters, and the waters of the Blue Nile as well, particularly if Ethiopia continues implementing its water projects through the construction of the Millennium Dam or the Grand Ethiopian Renaissance Dam[30].

Realizing that the United States is striving to redraw the geopolitical map of Sudan and to recreate and reshape a new Sudan, the secession of South Sudan thus carries extremely grave consequences for Egypt's and Sudan's water security, and even for the national security of both states, if the developments in the Nile Basin are not handled with awareness. I believe that Egyptian policy after the revolution began to be managed according to a clear strategy that maximizes Egyptian interests, seeks to expand frameworks of cooperation, and avoids conflicts with Nile Basin countries—especially those with a direct impact on Egypt's water security.

Therefore, Cairo appears to be the biggest loser from the secession of the South. Its loss is not limited to Nile waters, though these are the most crucial, but also extends to other interests, such as the reduction of its strategic security depth to the south, the direct impact on its security, role, and regional standing, in addition to the potential risk of contagion spreading to other areas in the North, geographically and culturally closer, and perhaps even within its own territory[31].

Conclusion and Findings

Through the discussion of the preceding themes, we reached the following conclusions:

- It is evident that the secession of South Sudan will have significant effects on Arab–African relations, and even on Arab–Arab relations, as in the case of Sudan's relations with Egypt. Secession will lead to further complications regarding the water crisis in the Nile Basin, and the establishment of a recognized state in South Sudan will have profound legal and political consequences.
- The creation of the State of South Sudan casts negative repercussions on Sudanese national security as well as Arab national security. Such a step may encourage other ethnic groups and regions in Sudan and the Arab world to pursue secession, thereby creating instability, paralysis, fragmentation, and division. Consequently, colonial powers will use South Sudan as a base to implement their strategy of striking the entire Arab region and reshaping it to serve colonial interests.
- From the perspective of security threats, the establishment of the State of South Sudan poses a threat to Arab water security, as a new state will join the system of Nile Basin countries. This will threaten the safeguarding of Sudan's and Egypt's interests in the Nile waters through the likely alignment of South Sudan with upstream countries in their struggle with the downstream states, Sudan and Egypt. This aims to establish a new formula to govern their conflict with the two downstream countries.
- The addition of South Sudan as a new state to the system of Nile Basin countries threatens to secure Sudan's and Egypt's interests in Nile waters through its anticipated alignment with upstream countries, within the framework of their conflict with the two downstream countries, Sudan and Egypt, aiming to create a new formula for water distribution among the basin states.

Proposed Recommendations

- Activate the Arab League by granting it the full capacity to fulfill its role in serving joint Arab action.
- Activate **water diplomacy**, which is one of the new and non-traditional forms of diplomacy, in order to mitigate the harm of the Renaissance Dam on Egypt's water security. This can be achieved through negotiation rounds and intensifying bilateral visits with Nile Basin countries, whether at the presidential or ministerial levels.
- Egypt must adopt a **cooperative approach** (political, security, economic, and cultural) with the Nile Basin countries in particular and with Africa in general, as this constitutes one of the pillars of Egypt's water and national security.

- Work on gaining and securing Sudan's support as a strategic partner in negotiations and as a depth for Egyptian national security, especially since South Sudan supports the construction of the Renaissance Dam.
- Build a strong Egyptian economic base to be used and invested in its relations with African countries, serving as an element of attraction, alignment, and containment for those states. This would allow Egypt to play an influential and effective regional role on the African level.
- Intensify political and diplomatic efforts at the highest levels to strengthen regional and strategic alliances with groups of countries within African regional zones.
- Work on preparation, coordination, and cooperation within the framework of strategic partnerships with active states in the African scene, which have interests and influence in the continent, such as the United States, China, and France.

Final Note

The **Arab African Summit** constitutes an appropriate mechanism to strengthen Arab–African relations, provided that it is reinforced and founded on the principle of strategic partnership between Arabs and Africans under the conditions of equality, reciprocity, and mutual benefits, with the aim of safeguarding regional peace in Africa and advancing economic development.

This requires that Arab national security be a comprehensive, coordinated, and consultative process supported by genuine Arab efforts to build the national security system that is sought.

Finally, it can be said that the strength of Egypt or any Arab country lies in its unity and alliance against the conspiracies being devised against it, given the immense resources and economies it possesses, which can achieve economic and social security, ultimately leading to the realization of political and strategic security for the construction of a comprehensive Arab security system.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the research, authorship, or publication of this article.

Endnotes

1. Bouhoush, A. (2014). *Research Methods and Ways of Preparing Research*, (7th ed.), Algiers: Diwan of University Publications.
2. Chalabi,M. (1997). *Methodology in Political Analysis: Concepts, Approaches, Tools*, Algiers: DDN.
3. Mamdouh S. M. K, (1995). *National Security and International Collective Security*, Cairo: Dar Al-Nahda Al-Arabiya.
4. Lakhamissi, C. (2010). *International Security and the Relationship Between NATO and Arab States – The Post-Cold War Period (1991–2008)*, Master's Thesis in Political Science and International Relations, Cairo: League of Arab States, Institute of Arab Research and Studies, Arab Organization for Education, Culture, and Science.
5. Houidi, A. (1982). *Arab Security in Confrontation with Israeli Security*, Beirut: Dar Al-Tali'a for Printing and Publishing.
6. Hamed, R. (1980). *The Theory of Arab National Security*, Cairo: Dar Al-Mawqif Al-Arabi,.
7. Ismail, M. (2009). *Arab National Security*, Cairo: Madbouly Library,

8. Al-Kilani, H. (1996). *The Concept of Arab National Security: A Study in Its Political and Military Aspects*, Cairo: Arab Studies Center,.
9. Jad, M. A. & Mohamed,M.E. (2020). *The Impact of Sudanese–Israeli Normalization on Egyptian National Security*, Arab Democratic Center.
10. Ibid.
11. Ibid., p. 8.
12. Sharab, F.K.(2016). *The Impact of the Israeli Conflict on Egyptian National Security*, Al-Aqsa University Journal (Series of Human Sciences), 20(2).
13. Ibid., p. 251.
14. Ahmed, H.A.H. (2011*). Implications of the Potential Secession of South Sudan on the Future of the Region*," Eighth Strategic Report*"*.
15. Hamad, A.N. (2012). *The Secession of South Sudan: A Holistic Perspective at the Intersection of Transformation*, in I. Raafat, A, Al-Tawil, M. Mohareb & others. *The Secession of South Sudan: Risks and Opportunities*, Doha: Arab Center for Research and Policy Studies.
16. Obeid, M.A (2012). *The Repercussions of South Sudan's Secession on Neighboring Arab–African States*, The Arab Journal of Political Science, (33),1 -12.
17. Ibid., p. 81.
18. Ibid.
19. Qur'an, Surah Al-Anbiya, Verse 30.
20. Al-Samarrai,M.A (2012). *The Strategy of Water Usage for the Nile Basin Countries*, (1st ed.). Amman: Al-Dhakira Publishing and Distribution.
21. Ibid., p. 209.
22. Al-Hilali,H.A.S.(2019). *Egyptian Water Security: A Study of Threats, Risks, and Confrontation Mechanisms – The Renaissance Dam as a Model*, Journal of the Faculty of Economics and Political Science, 6th October University, Egypt, 20(2),April 2019.
23. Ibid., p. 108.
24. Ibid., p. 114.
25. Ibid.
26. Bicheal,B.(2009). *Water Crisis in Israel* (p. 178).
27. Salah,M. (2006). *The Strategic Importance of the Nile River in Egypt*, Middle East Studies.
28. Al-Sadiq Al-Fadel,A.S.S.H.(2013). *A Strategic Vision of the Repercussions of the Establishment of South Sudan on Arab National Security*, Master's Thesis in Strategic Sciences, specialization in Regional and International Studies, Saudi Arabia: Naif Arab University for Security Sciences,.
29. Ibid.
30. Ibid.
31. Al-Faqih,A.S.(2011). *The Division of Sudan: Reshaping the Balance of Power*, Al Jazeera Reports.Retrieved July 15, 2025. from: https://studies.aljazeera.net/ar/reports/2011/20117222468703580.html, accessed

References:

1. Bouhoush, A. (2014). Research methods and ways of preparing research (7th ed.). Algiers: Diwan of University Publications.
2. Chalabi, M. (1997). Methodology in political analysis: Concepts, approaches, tools. Algiers: DDN.
3. Mamdouh, S. M. K. (1995). National security and international collective security. Cairo: Dar Al-Nahda Al-Arabiya.
4. Lakhamissi, C. (2010). International security and the relationship between NATO and Arab states – The post-Cold War period (1991–2008) (Master's thesis, Institute of Arab Research and Studies, Arab Organization for Education, Culture, and Science, Cairo, League of Arab States).
5. Houidi, A. (1982). Arab security in confrontation with Israeli security. Beirut: Dar Al-Tali'a for Printing and Publishing.
6. Hamed, R. (1980). The theory of Arab national security. Cairo: Dar Al-Mawqif Al-Arabi.
7. Ismail, M. (2009). Arab national security. Cairo: Madbouly Library.
8. Al-Kilani, H. (1996). The concept of Arab national security: A study in its political and military aspects. Cairo: Arab Studies Center.
9. Jad, M. A., & Mohamed, M. E. (2020). The impact of Sudanese–Israeli normalization on Egyptian national security. Arab Democratic Center.

10. Sharab, F. K. (2016). The impact of the Israeli conflict on Egyptian national security. Al-Aqsa University Journal (Series of Human Sciences), 20(2), 245–263.
11. Ahmed, H. A. H. (2011). Implications of the potential secession of South Sudan on the future of the region. Eighth Strategic Report.
12. Hamad, A. N. (2012). The secession of South Sudan: A holistic perspective at the intersection of transformation. In I. Raafat, A. Al-Tawil, M. Mohareb, & others (Eds.), The secession of South Sudan: Risks and opportunities (pp. xx–xx). Doha: Arab Center for Research and Policy Studies.
13. Obeid, M. A. (2012). The repercussions of South Sudan's secession on neighboring Arab–African states. The Arab Journal of Political Science, 33, 1–12.
14. Al-Samarrai, M. A. (2012). The strategy of water usage for the Nile Basin countries (1st ed.). Amman: Al-Dhakira Publishing and Distribution.
15. Al-Hilali, H. A. S. (2019). Egyptian water security: A study of threats, risks, and confrontation mechanisms – The Renaissance Dam as a model. Journal of the Faculty of Economics and Political Science, 20(2), April 2019.
16. Bicheal, B. (2009). Water crisis in Israel.
17. Salah, M. (2006). The strategic importance of the Nile River in Egypt. Middle East Studies.
18. Al-Sadiq Al-Fadel, A. S. S. H. (2013). A strategic vision of the repercussions of the establishment of South Sudan on Arab national security (Master's thesis, Naif Arab University for Security Sciences, Saudi Arabia).
19. Al-Faqih, A. S. (2011). The division of Sudan: Reshaping the balance of power. Al Jazeera Reports. https://studies.aljazeera.net/ar/reports/2011/20117222468703580.html

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Career Plateau and Strategies to Confront It in the Work Environment -A Theoretical Analytical Reading

Moumen Nouara
Lecturer - B – Work and Organisational Psychology
University of Batna 1, Laboratory of Psychological, School, and Professional Tests Bank
Algeria
E-mail: nouara.moumen@univ-batna.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Career Plateau; Work Environment; Confront strategies.

Abstract
This scientific paper aimed to explain the concept of "organisational plateau" through a set of theoretical approaches, employing a descriptive-analytical method. The researcher concluded that there is a point where an employee finds their profession easy and not challenging, facing fewer opportunities to develop their skills and abilities. They also experience limited vertical and horizontal movement in their career path, which makes them find no passion or purpose in it, looking forward to only two things in their work: "the end of the workday and the salary transfer." Most employees aspire to grow in their career paths and reach new levels of success. Still, when new challenges and opportunities become unclear, boredom or frustration may creep into the work environment, leading to negative repercussions for productivity, job satisfaction, overall happiness, and mental health. So, what is the meaning of the career plateau? And what are the strategies to confront it in the work environment?

Citation. Moumen N. (2025). Career Plateau and Strategies to Confront It in the Work Environment -A Theoretical Analytical Reading. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 300–311. https://doi.org/10.56352/sei/8.11.23

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 27.01.2025 | Accepted: 17.07.2025 | Published: 31.08.2025 (available online)

Introduction:

The career plateau has become a widespread phenomenon in many organisations today, exacerbated by the complexity of their functional organisational structures. It is considered a major problem within organisations as it increases employee frustration and ultimately affects organisational performance. Often, institutions follow a hierarchical structure for promotions, where the number of senior positions is limited, and this is a primary reason for reaching a career plateau. Researchers have recognised the serious impact of career plateauing on an organisation and its effectiveness, including its effects on the quality of work life. This has led to the study and analysis of human resource management practices in organisations aimed at fostering a better career life.

As human resource managers specifically strive to confront pressures and conflicts by creating and continuously developing a suitable and successful work environment—making it more positive for both the business and its

employees—their goal is to increase motivation, efficiency, and satisfaction. They also aim to help employees adopt positive behaviors in the face of challenges and pressures by emphasising equal opportunities for promotion and incentives, which significantly impacts the quality of work life. By also helping them to interact with management, identify and positively address shortcomings, and utilise and develop their abilities to increase performance and productivity, management has become aware of the career plateau's effects on the quality of work life.

1- The Concept of the Professional Plateau:

Changes in the business environment, such as restructuring, the flattening of hierarchical organisations, and downsizing, have led to an increasing number of individuals who see fewer opportunities for future promotion. Consequently, a large number of employees reach a plateau at an early stage, which narrows the path of career development and delays future promotion opportunities. Employees retain their positions for longer periods with little probability of advancement or an increase in job responsibilities. The concept of a career plateau refers to the lack of ability or desire to move to a higher level due to low professional or technical skills. Others may refuse a promotion because they feel bored with their current job, despite having the competence and ability to perform well.

Several definitions have been provided for the term:

- **Ference, Stoner & Warren (1977)** defined it as: the point or stage an employee reaches in their career path where opportunities for promotion are low or almost non-existent.
- **Cable (2012)** defined it as: that point where it becomes painfully clear that further career advancement is blocked for any of a variety of reasons (Khadir & Shaher, 2021, p. 59).
- It has also been defined as: a state that can cause discomfort among employees due to the lack of continuous upward progression, which is considered a standard for measuring employee performance, consequently leading to poor performance (Hussein & Hussein, 2021, p. 840).

The term "career plateau" is also synonymous with "career stagnation," which is defined as the stage or point in a career where an individual cannot obtain further promotions and advance up the administrative ladder.

- **(Khadir & Shaher, 2021, p. 59)** defined it as: a point in a job where the probability of upward promotion is low.

From the preceding definitions, it can be stated that a career plateau is a situation in which an individual experiences a lack of challenges in their job, faces limited opportunities to develop their skills and abilities, and has restricted vertical and horizontal movement in their career path (Kadid et al., 2021, p. 655).

The researcher concludes that the career plateau indicates a lack of ability or desire to move to a higher level due to low professional or technical skills. Others may refuse a promotion because they feel bored with their current job, despite having the competence and ability to perform well.

The career future of employees in an organisation can be classified into several main categories:

- **Learners:** These are employees with a high probability of promotion and advancement, but whose performance level is below the established standard, such as new trainees or recent hires.
- **Stars:** These are employees who perform outstanding work, achieve high levels of performance, and have high aptitude and probability for continued progress and growth. These are the fast-tracked individuals on their career paths (Bouzorine, 2018, p. 63).
- **Ineffective Employees (Deadwood):** These are individuals whose performance is unsatisfactory and who have no opportunities for promotion within the organisation, as illustrated in the table:

  Table No. (01): Illustrates the classification of the career future for employees in the organisation

Current Performance	Future Promotion Potential	
	Low	High
High	Established or professionally stable employees (3) (Effective stagnation)	Stars (2)
Low	Employees at career end (4) (Ineffective stagnation)	Learners (1) (Newcomers)

Source: Al-Salem & Saleh (2006).

Naturally, the organisation prefers all its members to be stars or effective, stable individuals, but the challenge it faces is:

1. Transforming newcomers or recent hires into stars or members of the group characterised by effective career stagnation.

2. Preventing stars and individuals with effective career stagnation from declining into the group of the functionally terminated or those of no use to the organisation (Bouzorine, 2018, p. 64).

2. The Importance of the Career Plateau in Organisations:

1. The career plateau is not a new phenomenon; however, the issue of concern is the rate at which it has become widespread in many organisations due to changes in the business environment, restructuring, downsizing, and reduced job opportunities. The career plateau will likely become one of the most significant career issues in the coming years.

2. The lack of advancement opportunities in professional life—as individuals do not progress up the hierarchical ladder as quickly as they desire or according to their skills and experience—combined with social, economic, and demographic pressures, causes a career plateau for a larger number of employees, often at younger ages.

3. The career plateau is an important phenomenon, and many demographic, organisational, and economic factors will likely lead to a significant increase in its occurrence in the future. Greater service demands, more complex technologies, and shorter product life cycles have necessitated more horizontally oriented organisational structures, with fewer jobs available for the upward movement of employees in the organisational pyramid.

4. Mergers and acquisitions have also been a reason for reducing the number of employees, which ultimately leads to career plateaus.

5. The career plateau has received an increasing amount of attention from researchers as promotion possibilities within organisations have become more limited. Recent decades have seen a growing interest in investigating why employees leave an organisation. However, knowing the reasons for leaving a job comes too late to stop the act of leaving and to discover the intention to leave. Certain analysts estimate that 70% of employees are already in a plateau state, while others believe the rate could be as high as 90% in later years, and that the chances of getting a promotion or a salary increase are very limited. Thus, the initial job we dreamed of becomes less attainable (Hussein & Noha, 2021, pp. 841-842).

3. Causes of the Career Plateau:

1. **Subjective Causes:** Individual factors such as age, locus of control, educational level, lack of skills, and ambition. Family factors range from family satisfaction and size to the partner's type of work. Low personal skills and abilities among employees and their negative repercussions on performance result in negative evaluations from their superiors, making promotion opportunities in their career paths non-existent.

2. **Weak incentive systems** lead to a decrease in employee motivation.

3. **The way employees perceive organisational phenomena and variables** is an important factor in diagnosing their career path and, consequently, an influential factor in their falling into a career plateau (Al-Tawati & Benyamina, 2024, p. 655).

4. Theories Explaining the Career Plateau:

4.1. Herzberg's Two-Factor Theory: In the early 1960s, Herzberg conducted research on 20 accountants and engineers in Pittsburgh to determine what drives an individual to perform and their level of job satisfaction. Through his analysis of their responses, he identified two different sets of feelings at work (feelings of satisfaction and feelings of dissatisfaction).

- **Motivation Factors:** These include: (Achievements - Recognition from colleagues and management - The work itself - Advancement and promotion - Responsibilities - Growth).

- **Hygiene Factors (causing dissatisfaction):** These are factors that protect and maintain the individual but do not motivate them to work. Their absence leads to severe dissatisfaction with the work. They are: (Company policy and procedures - Supervision - Relationship with superiors and subordinates - Personal life - Social status - Job security). These are causes of satisfaction and dissatisfaction. The factors related to satisfaction, if present, lead to satisfaction, and in their absence, the individual will not be satisfied. As for the factors related to dissatisfaction, if they are met, dissatisfaction will disappear, but if these factors are absent, the individual will be in a state of dissatisfaction (Al-Tawati & Benyamina, 2024, p. 656).

From this, it is worth saying that the working individual is subject to a set of factors that eliminate dissatisfaction, which can be called "hygiene factors," where there is neither satisfaction nor dissatisfaction, such as (salary, organisation's policy, job security, nature of supervision and guidance, social relations within the organisation). As for the set of factors that achieve satisfaction, they are called "motivators," which are linked to the components of the work itself and are represented by the ability to achieve, clarity of the individual's responsibility in the work they do, performing work of value to the organization, opportunities for advancement and growth in the work, etc.

It should also be noted that Herzberg believes that increasing performance levels does not lie in specialisation and division of labor, but requires the organisation to enrich jobs. This means making the work more complex with a margin of autonomy and responsibility, not only at the level of execution but also at the level of control. In addition, motivation is linked to desirable work (motivation), which leads to stimulating the individual's creative energies (professional competence).

In this context, Herzberg says that meaningful work is what leads to increased performance. This means that job enrichment helps individuals to drive possible improvements at the level of work organisation within the company.

4-2- Argyris's Theory of the Conflict Between the Individual and the Organisation:

Argyris (1957) criticised formal organisation in its classical sense, believing that the legitimacy of organisations stems from their ability to address complex societal problems, comprehensive needs, or future goals that individuals cannot solve or undertake on their own. He views organisation as a civilizational innovation that humanity has developed over its long journey in facing life's difficulties. In his analysis, he posits that the smallest nucleus in the organisation, the individual, is itself a complex organisation. Consequently, every organisation is a large collection of complex systems. Organisational energy is only generated when it is charged with human energy that enables it to grow and contribute.

Argyris points to the contradiction between the needs of individuals and the requirements of the formal organisation, considering it a pathology that threatens the organisation because it leads to suppressing individuals' drive, curbing their desires, or hindering their growth by programming their behavior and standardising their movements. This affects their attitudes, inclinations, ways of thinking, and lifestyle, which in turn generates frustration, conflict, and anxiety. This leads to the spread of hostile and defensive behavior among individuals, reduces their efficiency, increases labor costs, and ultimately causes the organisation to fail and decline. This

prompted Argyris to propose a set of mechanisms that he believed could reduce these contradictions, the most important of which are:

1. Replacing the traditional thinking of organisations with contemporary ideas.
2. Relaxing formal, hierarchical, and control-oriented methods.
3. Adopting a leadership focused on individuals rather than on production.

Assumptions of the Theory:

1. The needs and desires of individuals are inconsistent with the needs of organisations in many societies.
2. The organisation's needs are represented by the goals for which it was founded. These can be achieved if employees adhere to the roles and plans set for them by management. However, these roles result in frustration for individuals, placing them in a cycle of anxiety, conflict, and failure.
3. Stronger individuals tend to gather in informal relationships and practices to reduce anxiety and management pressures and to mitigate intrusive control and supervision procedures. These informal practices become necessary if the organisation wants to meet its minimum requirements.
4. The conflict between individuals' inclinations for self-integration and integration with others on the one hand, and their integration with the organisation on the other, create patterns of behavior that can be defensive, aggressive, or adaptive. This causes some employees to flee, while others rise to higher positions on the hierarchical ladder, and the rest tend towards isolation, avoiding all causes of anxiety and harm, thus failing to gain the satisfaction of either their colleagues or the management.

4.3. Maslow's Hierarchy of Needs Theory:

The hierarchy of needs theory is considered one of the most widespread motivation theories due to its ability to explain human behavior in the quest to satisfy various needs. Maslow assumed that once a human need is satisfied, it no longer serves as a motivator for behavior. Therefore, it is the unsatisfied needs that affect an individual's behavior and motivation, and the needs at the bottom of the pyramid must be satisfied first.

- **Physiological Needs:** These are the needs for which an individual works to earn a wage to satisfy their need for food and drink.
- **Safety Needs:** After satisfying physiological needs, a person seeks security to protect themselves from dangers in their natural environment and surroundings.
- **Social Needs:** This is the need to form social relationships with members of society to gain the ability to face risks.
- **Esteem Needs:** This is represented by the individual's need to gain the respect and esteem of others.
- **Self-Actualisation Needs:** This need is located at the top of the pyramid and involves achieving one's full potential through accomplishment and creativity (Al-Tawati & Benyamina, 2024, p. 658).

5. Dimensions of the Career Plateau:

5-1. Structural Plateau:

This arises when an individual remains at a certain point from which it is difficult to move further for several reasons, including the lack of vacancies at higher levels, not possessing the necessary skills and abilities, an increase in the number of employees qualified for promotion, a high number of graduates, the introduction of modern technologies at work, and intense competition among employees. Consequently, opportunities for vertical promotion become scarce. This plateau is a natural result of the hierarchical structure of organisations and the low number of jobs compared to the number of employees aspiring to be promoted to higher levels. Age can be one of the most significant factors causing this plateau if the organisation decides to appoint younger employees based on the belief that older workers have a lower capacity for learning and performance, and a reduced desire to develop themselves.

5-2. Job Content Plateau:

This occurs when an employee has experience and knowledge of their current job and performs it optimally, making it difficult for them to obtain new responsibilities. This can lead to feelings of frustration, loss of enthusiasm, low job satisfaction, weak commitment, a lack of career goals, and decreased productivity.

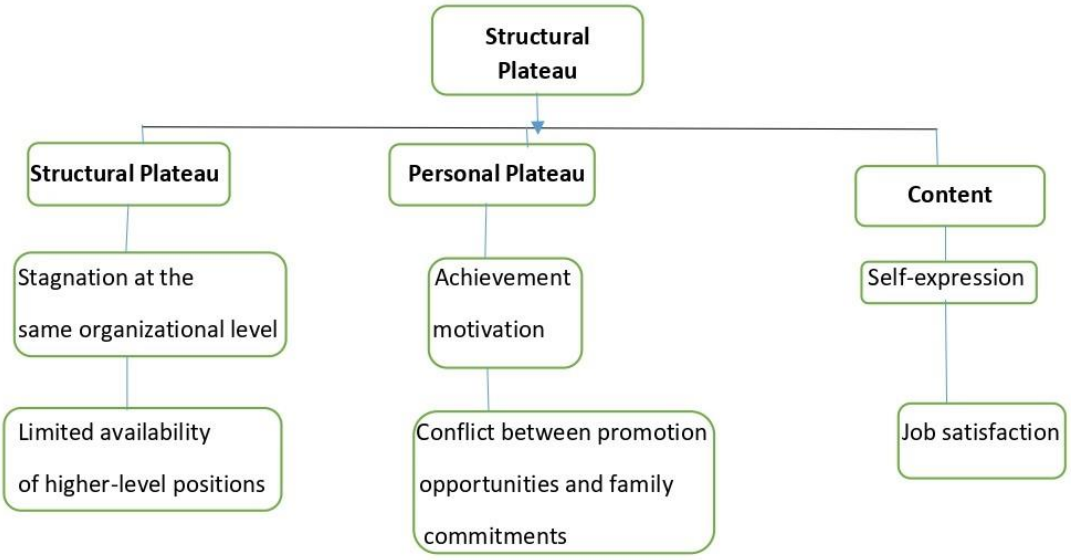
As Salameh (2010) indicates, the content plateau is facing a significant decrease in the level of challenge, learning, and interest in the work. The individual remains in their current job, but time passes without any change to that job or its responsibilities and tasks, leading to feelings of boredom and a lack of challenge, eventually resulting in frustration and despair.

5-3. Personal Plateau:

In this type of plateau, employees lose their desire for a higher job level either because they lack the professional and technical skills or because they possess the skills and abilities but do not wish to be promoted.

This plateau is considered the most dangerous type because the employee lacks motivation and enthusiasm in most of their work-related activities due to intrinsic factors affecting their feelings. A kind of deficiency arises in the individual's capabilities to take on a higher-level job due to work pressure or family commitments. The life-career plateau is one of the factors that contributes, to some extent, to the occurrence of the personal plateau (Khadir & Shaher, 2021, p. 62).

Figure 1: Dimensions and Indicators of Career Plateau



Source: researcher design

6. Definition of the Work Environment:

It is the set of mutual relationships between employees, employers, and the environment in which they work, which can be positive or negative. Positive work environments provide enjoyable experiences for employees that help them achieve their personal goals, while negative work environments provide painful experiences and reduce good employee behavior at work. Irresponsible or uncommitted employees can change to become responsible and more committed to work in a positive work environment because such environments enhance their self-actualisation traits, whereas the opposite may be true in a negative environment (Maghribi, 2022, p. 94).

7. The Importance of the Work Environment:

There is no doubt that an ideal and encouraging work environment is a fundamental component for the success of any institution in the 21st century. The following points highlight the importance of an effective work environment in several key areas:

- **The Ability to Build a Competitive Advantage:** For an organisation to survive and grow, it must have the ability to remain competitive. This is achieved by building a competitive advantage, which Ali Al-Sal'i defines as "the distinct skill, technology, or resource that allows the organization to produce benefits for customers that exceed what competitors offer, from the customers' perspective, who accept this difference and distinction as it provides them with more benefits and values that surpass what other competitors offer" (Ghazi & Al-Anaz, 2021, pp. 437-438).

- **The Greatest Investment is in Human Resources:** The field of human resources has recently witnessed significant attention, particularly a broad consensus on development and training processes. This is due to the strong conviction from management that an organisation cannot achieve its goals otherwise. Human resources has become an important part of intellectual capital, representing the knowledge, skills, and abilities possessed by individuals. Human capital is usually reflected through individuals' education and experience, as well as through specific skills they acquire.

- **Increasing the Organisation's Financial Return:** Numerous global studies have proven a close correlation between the financial return of companies and the job satisfaction of their employees. Therefore, the ultimate goal should be to provide an ideal work environment that primarily aims to increase employee productivity. This, in turn, contributes to raising the level of customer satisfaction, leading to the achievement of the best financial and non-financial returns, where everyone is a participant in the profit.

- **The Work Environment is the True Mirror of the Company:** When internal customers, or human resources, are cared for through effective management (a good wage system, fair incentives, a positive organisational climate), this is reflected in job satisfaction and high morale. This, in turn, is reflected in the organisation's good performance, which achieves quality in services and production, giving a good image of the company. As stated in Al-Qahtani's (2001) study on the impact of the internal work environment on organisational loyalty, there is a relationship between the work environment and organisational loyalty in the researched institution.

- **Increasing Productivity and Improving Quality:** In this regard, Ken Blanchard says, "American managers quickly discovered that the cornerstone of many Japanese work programs is the approach of empowering employees to make decisions related to their work." For example, quality circles—groups of employees who meet regularly to come up with ways to improve the company's performance—became a common Japanese method for participation in decision-making. The decisions made by quality circles receive the attention and appreciation of senior management (Maghribi, 2022, p. 94).

8. Dimensions of the Work Environment:

8-1. The Economic Dimension:

This is not only at the level of the company or organisation but at the level of the country as a whole. The more efficient the workers, the more the economy of the society and the country progresses. This is embodied through cost. Usually, all labor costs are borne by the organisation itself, such as work injuries, salaries, wages, and compensation, as well as resolving issues of temporary and permanent disability. The national economy is negatively affected when an organisation pays significant expenses for accidents and injuries, because it spends most of its budget on corrective measures and treatments rather than on its core operations that would contribute valuable outputs to society. Consequently, all its expenses will go towards satisfying the work environment's needs to be capable of making more contributions.

8-2. The Human Dimension:

When a worker in an organisation or company suffers an injury, it hinders the overall output process. It also affects their personal life, as they may be left with a disability, unable to work to support their family. This can lead to frustration, even if they recover in the future. They may no longer want to work unless the responsible

company intervenes and supports their family, or at least pays them half their salary to raise their morale and encourage a speedy recovery. This way, the company will not incur excessive expenses.

8-3. The Healthy Work Environment:

To ensure a healthy work environment, a company should provide the following:

Continuous development of the organisation or company to keep pace with the times, especially in implementing prevention and safety measures for employees.

Reviewing the output and production processes to ensure they are sound and do not cause harm, and inspecting them throughout the month to continuously correct faults, to reduce work accidents and injuries, and to increase production more quickly and without any obstacles.

If more comfortable and safer equipment is found than what is currently available, it is preferable to purchase it to provide the utmost safety and comfort for workers.

Training and qualifying workers and employees for any potential future risks and how to deal with them, and providing them with courses in first aid, so that employees pay more attention to following prevention and safety procedures when using machinery and equipment (Aker, 2020, pp. 30-31).

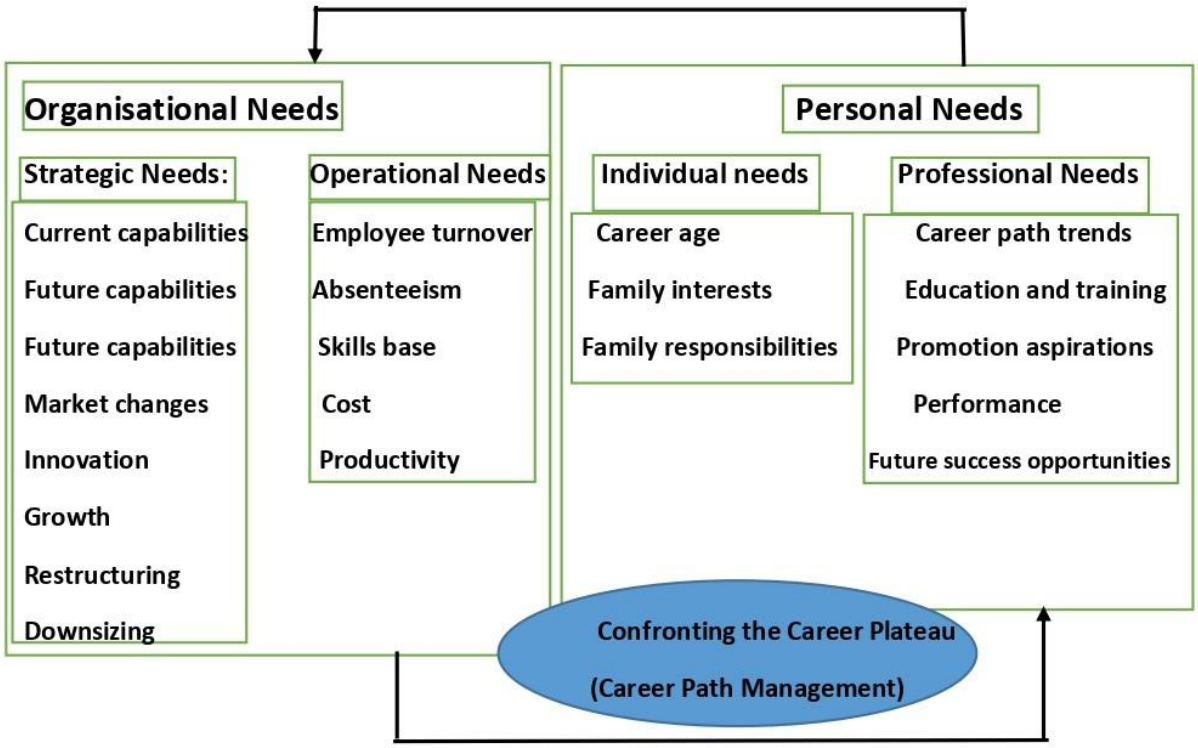
6. Strategies for Confronting the Career Plateau in the Workplace:

This section aims to clarify some frameworks as alternatives for addressing employees affected by the career plateau, which can be listed as follows:

1. Aligning Personal and Organisational Requirements to Address Career Plateau Cases:

Confronting the career plateau requires creating an alignment between personal and organisational requirements. Organisations typically aim to create harmony between the organisation's needs and requirements on one hand, and the desires and requirements of employees on the other, when designing career paths. Consequently, linking career paths as a basis for career movement with career plateau situations, which may be a part or a stage of these paths, is essential. All of this requires the organisation to conduct up-to-date studies and research in all areas of human resource policies in general, and career paths in particular. Reference can be made to the study of (Bohlander & Snell, year) to provide a clear idea of this stall, as is evident in Figure (02):

Figure No. (02): Illustrates the alignment between personal and organisational requirements to confront career plateau cases:



Source: Mohammed (n.d.,p09)

Achieving adaptation and compatibility between the organisation's requirements and the individual's needs is not easy, as it requires depth of thought and the ability to link and analyse various human resource policies. These include quantitative and qualitative human resource planning, developing the capabilities of these resources, policies of recruitment, selection, and appointment, as well as job analysis and evaluation, performance appraisal, monitoring and studying promotions, job evaluation, and determining wages, rewards, and incentives, among others. All of these factors influence the determination of career paths in one way or another. Therefore, organisations are forced to change their directions and alter their human resource strategies to achieve compatibility with these changes. Accordingly, the existence of goals is a requirement for achieving effectiveness and success. Organisational needs must also be linked to personal needs in a way that contributes to achieving employee satisfaction and the organisation's strategic goals simultaneously. Furthermore, creating this alignment between personal and organisational needs with the aim of managing them and helping employees face them requires a role from the organisation and another from the employees, as follows:

1. **Develop integrated human resource plans** that consider the organisation's needs and its future aspirations for human resources.
2. **Design career paths** and create a guide for different paths, dual paths, and network paths.
3. **Define career paths** and identify a source for counselling to assist employees in determining their career paths in a way that aligns with the organisation's requirements.
4. **Appoint individuals with high competence and experience** in career planning within the human resources management framework to assist employees and provide them with advice and counsel to help them choose the best possible paths.
5. **Adopt employee performance evaluation systems and programs** to identify their potential and capabilities and develop them to ensure they find the best job opportunities within the defined paths in the organisation, with integrated feedback on the results of employee evaluation and the changes they undergo during their career progression to map their future without advancement.
6. **Use succession and replacement charts** within the scope of human resources management to identify the best replacement and to determine the organisation's available and potential human resources.

These replacement charts help in finding alternatives quickly and at a lower cost, and lead to identifying areas of weakness among employees to address them.

7. **Design or redesign jobs**, as well as continuously update job descriptions after analysing current jobs and their components, to create important new jobs or eliminate others, and to align employees with their jobs, and to help in selecting the best employees based on their qualifications for the jobs to be filled.

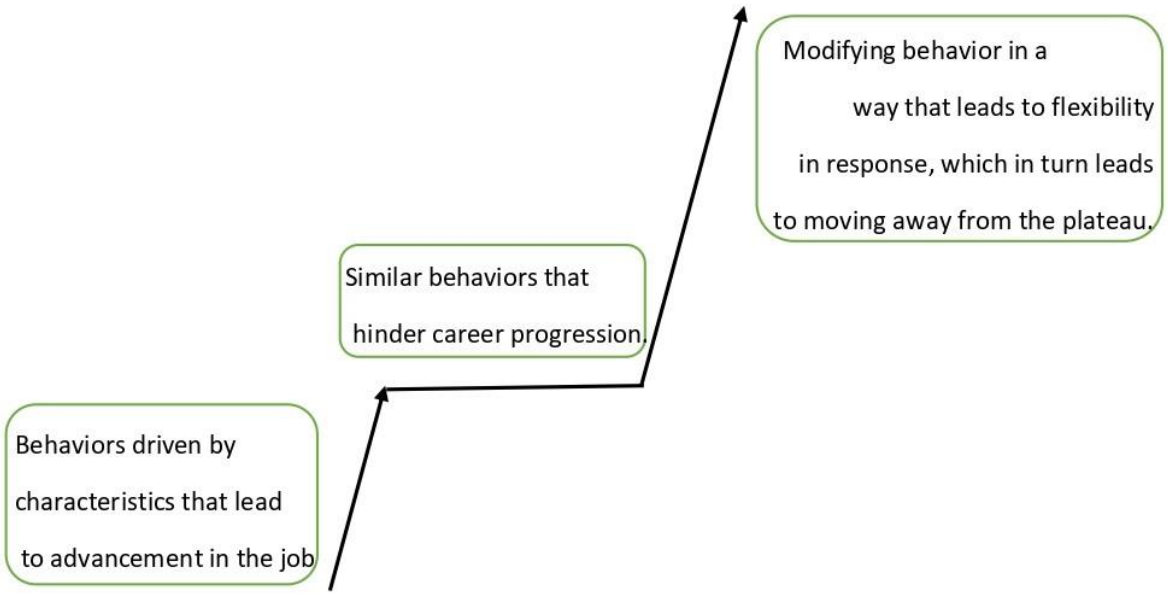
8. **Continuously inform employees** about vacant positions, available job opportunities, and the requirements to obtain them promptly so they can adapt themselves and know their qualifications and abilities to advance in their career paths.

9. **Provide employees with opportunities to learn**, whether through various training programs or by giving them the chance to complete their academic and university education in a manner that suits their abilities and the organisation's needs. Training can be on-the-job, within the organisation, or even outside it.

10. **Encourage employees to train and learn outside the organisation** and in advanced organisations to gain high-level experience that qualifies them for higher positions, as well as to provide new competencies and capabilities that the organisation needs.

11. **Build a new organisational culture** that adopts modern human resource management policies and their reliance on investing in and developing human resources. Also, build a culture that commits the organisation's leadership and senior management to teaching, guiding, and providing advice to employees to develop and prepare them for senior positions. Within these areas that compel the organisation to change its direction, a fundamental issue arises, which is what happens after employees fall into a career plateau and the necessity of changing behaviors to face this situation. Basic areas for confronting it have been identified, as is clear in Figure (3).

Figure 3: Illustrates the stages of the career plateau.


Modifying behavior in a way that leads to flexibility in response, which in turn leads to moving away from the plateau.
Similar behaviors that hinder career progression.
Behaviors driven by characteristics that lead to advancement in the job

Source: Mohammed (n.d, p 14).

From Figure (3), we notice the development of awareness among employees, the dismantling of poorly adaptive behaviors, and the identification of attitudes towards this type of behavior. Then, behaviors and attitudes that achieve flexibility in response are built and rebuilt to improve performance in a way that enables the measurement of this problem's existence and helps in avoiding it.

Through all this, we conclude that 3 actions can help in managing the process of career stagnation:

1. **Preventing the problem from occurring:** This means preventing career stagnation from turning into ineffective stagnation by helping individuals who are functionally stagnant or static to adapt themselves to be in the group of individuals with effective career stagnation.

2. **Improving follow-up and supervision:** This is to detect the problem as it appears, meaning the integration of information systems related to the individual's career life. This can be achieved through a performance appraisal system that should encourage open communication between the individual and their superior.

3. **Treating the problem as soon as it appears:** This means dealing with individuals with career stagnation or who feel frustrated in an effective manner (Bouzorine, 2018, p. 65).

09- Alternatives for Treating the Career Plateau:

The most important steps for treating the career plateau are as follows:

- Analyse problems and identify the employees likely to be affected by them.
- Communicate with employees through constant contact to understand their desires in line with the organisation's interests.
- Determine what the organisation wants and what the employees want.
- Make decisions to resolve conflicts among employees to determine precedence for promotion and advancement opportunities.
- Control the management of employees' interests within the organisation and manage the employees.
- Identify the personal competencies of employees at all different levels.
- Invest the available time in devising the best methods for employee advancement and outlining the steps needed to face mid-career problems, in which we see employees plateauing, and to be prepared for it in advance.
- Draw up strategies to face mid-career problems and personal and family issues that may confront employees and organisations with unforeseen or unstudied problems as much as possible (Al-Sultani, 2015, p. 255).

Some ways to overcome career stagnation as mentioned in: https://www.dztecs.com/career/what-is-career-stagnation-and-how-to-overcome-it

1. **Have a clear career goal:** One of the reasons individuals do not discover stagnation in their careers early enough is the lack of a clear career goal. Many candidates are asked the following question in a job interview: Where do you see yourself in 3–5 years? But they have no answer because there is no career goal in the picture. Everyone just wants to go with the flow.

2. **Look for new challenges:** It is easier to slip into career stagnation when you lose all enthusiasm for your professional role, and it becomes mundane. You can approach your manager or project leader and ask for a new challenge.

3. **Stay informed about industry changes:** Every year, we see technological advancements and improvements in various industries. Individuals who are not aware of the changes in their industry will find it difficult to cope with their profession.

4. **Update your skills:** Acquiring skills is part of an effective personal development plan and an integral part of career growth. Updating your skills is essential to match the competition in your chosen career. You may have started with a basic certificate in the banking or IT sector. To be at the top of your game, you need to acquire relevant skills and certifications that will help you climb the ladder.

5. **Build some relationships:** Networking with people in the same sector can open up opportunities in your career. When you rub shoulders with great people in your field, you learn and become privy to information you would not have otherwise been exposed to.

Conclusion:

In conclusion, the researcher deduces that the career plateau is an organisational phenomenon with negative repercussions on productivity, job satisfaction, happiness in life, and mental health in general. However, deterring and confronting it relies primarily on the organisation's strategies for investing in and preserving its human resources. This is achieved through motivation processes, improving the work environment, and providing everything that would increase achievement motivation. It also involves building a good organisational culture that adopts modern human resource management policies and their reliance on investing in and developing human resources. Furthermore, it includes building a culture that commits the organisation's leadership and senior management to teaching, guiding, and providing advice to employees to develop them and prepare them for senior positions. Within these areas that compel the organisation to change its direction, a fundamental issue arises, which is what happens after employees fall into a career plateau, and the necessity of changing behaviors to face this situation. Key areas for confrontation have been identified, which are replacing the traditional thinking of organisations with contemporary ideas, relaxing formal, hierarchical, and control-oriented methods, and adopting leadership focused on individuals rather than on production.

References:

1. Al-Salem, M, M.S. & Saleh. A, H. (2006). *Human Resource Management: A Strategic Approach*, Second Edition, Modern World of Books for Publishing and Distribution, Amman, p. 225.(In Arabic)
2. Ahmed, Osama (2025): What is Career Stagnation in Organisations and How Can it be Overcome? Available at the website: https://www.dztecs.com/career/what-is-career-stagnation-and-how-to-overcome-it.(30.07.2025. 20:30).(in Arabic)
3. Aker, M. K. (2020). The Importance of the Work Environment in Achieving Job Creativity. *The International Journal for Publishing Research and Studies*. Volume 1, Issue 11. (In Arabic)
4. Al-Dabbagh, Z. G. T., & Al-Anaz, Y. (2021). The Role of the Occupational Health and Safety System According to the Standard in Improving the Work Environment. *Tikrit Journal of Administrative and Economic Sciences*. Tikrit University. Volume 17, Issue 53. (In Arabic)
5. Al-Tawati, M., & Ben Yamina, A. (2024). A Socio-Organisational Reading of the Relationship between the Career Plateau and Job Alienation. *Al-Risala Journal for Human Studies and Research*. Volume 9, Issue 3. University of M'Sila. (In Arabic)
6. Bouzorine, F. (2018). Developing the Career Path for Employees in Economic Institutions. *Journal of the Research Unit in Human Resources Development*. Volume 9, Issue 4. Ferhat Abbas University, Sétif. (In Arabic)
7. Kadhim, S. H., & Al-Sultani. (2015). *Psychological Perspective of the Career Plateau and its Repercussions on the Philosophical Foundations of Human Resources Strategies - An Analytical Exploratory Study in a Sample of Iraqi Organizations*. PhD Thesis in Business Administration, College of Administration and Economics, University of Karbala. (In Arabic)
8. Maghribi, A. (2022). The Work Environment in Organisations – An Analytical Study. *Journal of Modern Economy and Sustainable Development*. Volume 5, Issue 2. University of Tissemsilt. (In Arabic)
9. Mohammed, J, (n.d), *The Career Plateau*, Al-Mustansiriyah University. (In Arabic)
10. Saleh, S. H., & Mohammed, N. H. (2021). The Career Plateau and its Impact on the Quality of Work Life - A Field Study in the Ministry of Education Center. *Al-Dananir Journal*. Issue 23. (In Arabic)
11. Yousef, S. K., & Askar, S. S. (2021). Repercussions of the Career Plateau on Job Burnout. (In Arabic)

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems

Issue 11, Vol. 8, 2025

Title of research article

Theoretical Approaches Explaining Stuttering

Ait Yahia Nadjia
University of Saida, Dr. Moulay Tahar, Development Laboratory for Social and Human Sciences
Algeria
E-mail: nadjia.aityahia@univ-saida.dz

Hacene Lamia
University of Algiers 2, Abou el Kacem Saâdallah, Language and Cognition Laboratory: Development and Disorders
Algeria
E-mail: lamia.hacene@univ-alger2.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Stuttering, fluency disorder, factors, causes, theories

Abstract

Stuttering represents one of the most common language disorders among children, and it affects the flow and stream of speech, thus leading to a disruption in its smoothness such as repetitions, blocks, and pauses. There are accompanying disorders like fear and confusion, feelings of embarrassment, and avoiding talking to others, along with the issuance of involuntary body movements.

Many researchers have given scientific explanations for fluency disorder, and therefore in this research, we will try to highlight the most agreed upon and confirmed theories through research and studies. Thus, the most important theoretical approaches in explaining the stuttering disorder will be presented, which can be classified into three main axes: organic factors (biological and neurological), psychological and emotional factors, and environmental and social factors, as follows:

The biochemical theory, the neurological theory, the cerebral dominance theory, the neurotic theory, classical conditioning, the required capacities theory, the behavioral theory, the genetic theory, the anticipatory struggle theory, and finally the theory related to environmental and social factors.

Citation. Ait Yahia N., Hacene L. (2025). Theoretical Approaches Explaining Stuttering. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 312–323. https://doi.org/10.56352/sei/8.11.24

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.01.2025 | Accepted: 14.06.2025 | Published: 31.08.2025 (available online)

Introduction

Stuttering represents a disorder in the fluency and smoothness of speech, and it affects the individual's ability to speak fluently. It is characterized by various manifestations such as repetition of sounds, syllables, or words, in-

voluntary pauses during speech, and may be accompanied by other physical symptoms that can create psychological problems for the individual.

Although stuttering usually appears in early childhood and continues into adulthood, its causes are still not fully understood and are subject to many theories and scientific studies.

Research, to the extent of my knowledge, indicates that the causes of stuttering may be a mixture of genetic, neurological, behavioral, psychological, and environmental factors. Genetically, the likelihood of stuttering increases in individuals who have a family history of this disorder. From a neurological point of view, differences have been observed in brain activity in people who stutter, especially in areas responsible for speech production and muscle movement coordination. Psychological and social factors also play an important role, as anxiety, psychological pressure, or difficult social situations can worsen stuttering.

In addition, behavioral factors such as reinforcement and punishment affect the appearance of stuttering, which is considered a learned behavior. Some environmental factors, such as high expectations from the family or school, may contribute to the increased severity of the disorder.

In this article, we will explore in detail the possible factors causing stuttering and discuss the latest scientific theories that attempt to explain this disorder, which contributes to a deeper understanding of its nature and helps in determining the best methods of treatment and support.

Problematic:

Stuttering is considered one of the most common language disorders among children, especially in the preschool age, where the disorder affects verbal fluency or speech flow. It is characterized by repetitions, prolongations, pauses, and hesitations—often at the beginning of the word. Stuttering is accompanied by physical symptoms such as changes in facial parts like trembling, lip pressing, and head movements... It is also accompanied by respiratory problems like the inability to differentiate between inhalation and exhalation, in addition to psychological symptoms such as anxiety, shyness, and withdrawal behavior.

Stuttering occurs at the age of six in about 80% to 90% of affected individuals, the disorder may appear gradually or suddenly, and usually, fluency difficulties begin gradually with repetition of phonemes, syllables, and the first words of the sentence. The child may not be aware of the fluency difficulties at first, but as the disorder progresses and develops, the child becomes aware of the speech difficulty and may develop mechanisms to avoid these difficulties.

Fluency disorder can also be accompanied by motor movements, for example: eye blinking, tics, trembling of the lips or face, head movements, breathing movements, and hand clenching. Children who suffer from early-onset fluency disorder show a set of linguistic abilities. (Awda & Fakiri, 2016, p.70)

According to the ***Ooreka*** website, stuttering is a speech disorder characterized by difficulty in pronouncing or sequencing certain syllables without affecting the vocal organs. Stuttering disrupts speech fluency (normal speech speed is supposed to be around 90 words per minute). This speech disorder is a communication disorder and generally appears when a person tries to speak in front of an audience, whereas when alone, he or she does not stutter. The disorder also disappears in cases of whispering, singing, or imitating an accent.

Van Riper described three main stages of stuttering:

- **Initial Stage**: Characterized by easy repetitions at the beginning of words or syllables in sentences, without any emotional signs or psychological pressure. (Specialists do not consider these symptoms as stuttering.)
- **Secondary Stage**: Characterized by the stutterer's awareness of their speech fluency disruption and attempts to correct it. This indicates the beginning of anticipation and fear associated with stuttering.
- **Transitional Stage**: Appears between the previous two stages and is marked by signs of frustration, surprise, resistance, and avoidance of speaking. These are accompanied by efforts during repetitions or prolongations of words and syllables. The development of this stage leads to the transition into the secondary stage. (Al-Zriqat, 2005, p. 24)

Stuttering affects approximately 1% of the general population, with the majority being children. It is more common in advanced or developed societies than in primitive or underdeveloped ones. It also occurs more frequently in males than females, at a ratio of 3 or 4 to 1. (Kashif, 2010, p. 77)

Many theories have attempted to explain the phenomenon of stuttering. Some attribute it to organic and neurological factors, such as the Cerebral Dominance Theory. Other theories point to environmental, social, familial, and educational factors, such as the Diagnosogenic Theory and unrealistic parental expectations. Still, some theories relate stuttering to psychological causes, including the Psychoanalytic Theory, the Behavioral Theory, and the Neurological Theory, while others associate it with genetic factors.

Accordingly, this topic aims to answer the following question:

What are the common theoretical approaches to explaining stuttering disorder?

Numerous theories have attempted to explain stuttering, and they can be categorized into three main areas:

1. **Organic factors** (biological and neurological)
2. **Psychological and emotional factors**
3. **Environmental and social factors**

Each of these areas includes several theories that we will explore in the following sections.

First: Organic Factors (Biological and Neurological): Include the following:

1. The Biochemical Theory:

The theory of Robert West (1958) is one of the theories that attributes the origin of stuttering to organic causes. He believes that the phenomenon of stuttering appears during childhood and that it is more common among males than females. West believes that there are disorders in the metabolic process (which is the process of breaking down and building up the chemical composition of the blood) in people who stutter. Therefore, he considers stuttering a type of convulsive disorder similar to epileptic seizures due to several shared aspects, including:

- Both are convulsive disorders
- Both are more common among males than females,
- Both are affected by intense emotions,
- The importance of genetic and familial factors for both,
- Both are reflections of fear, which leads to the occurrence of the disorders. (Amin, 2017, p. 20)

Therefore, the biochemical factor has an effect on the emergence of fluency disorder.

2. The Neurological Theory:

Several neurological studies have shown that stuttering results from a deficiency in neural processing, including the study by Chang et al. (2011), which showed that the person who stutters suffers from a deficiency in transmitting white matter in the brain regions responsible for language and verbal production. Also, the deficiency in connectivity between the inferior frontal gyrus and the premotor cortex in the left hemisphere is neurologically linked to stuttering.

According to Cykowski et al. (2010), the brain dysfunction in stuttering lies in a deficiency in the formation of the myelin sheath of white fibers in the areas responsible for verbal language. The myelin sheath that surrounds the nerve axons develops during the first years after birth. This growth period explains transient stuttering, while chronic stuttering results from a failure in forming the myelin sheath (Packman, 2013, p. 209).

The process of forming the myelin sheath is the covering of nerve axons with a protective sheath, where it was observed that covered nerve axons can transmit impulses efficiently and quickly to the speech centers in the brain compared to axons that are not fully covered. This leads to speech output characterized by rhythm disturbances, repetition, and fragmentation. (Amin, 2017, p. 21)

Research findings indicate that the brains of people who stutter function differently to those of control participants for speech and language tasks, compared to control participants, people who stutter have over-activation in areas of the right hemisphere and under-activation of some areas in the left hemisphere when performing the same speech tasks. (Nang, 2012, p.15)

We conclude that any changes in brain formation, deficiencies in a specific function, or immaturity in some necessary parts—all of this disrupts speech fluency.

3. The Psycholinguistic Theory:

This theory was proposed by Perkins, Kent, and Curlee in 1991 regarding stuttering. It is a comprehensive theory that addresses fluent speech production, speech characterized by stuttering, and speech interruptions that are free of stuttering. In general, two components are required for the production of stuttering: the linguistic or symbolic system and the parallel or signaling system. The brain processes each of them separately and then directs them through a shared output system.

For fluent speech to occur, the system must be timed so that there is coordination and integration between the two, transforming them into the familiar system. If there is no coordination between the two systems, a disruption in speech fluency occurs. This disruption manifests as a loss of control—or the actual moment of stuttering—by the speaker only in the presence of time pressure. Time pressure is defined as the need for the individual to begin utterances, continue them, or accelerate them. In the absence of time pressure, the speech produced appears as nonfluency free of stuttering, resembling the experience of most fluent speakers. (Al-Muaigel & Al-Muaigel, 2022, p. 139)

4. The Cerebral Dominance Theory:

The brain is the engine that controls our actions, movements, and speech. Therefore, any defect in its structure or function leads to a language disorder. It is known that one hemisphere of the brain takes the lead in regulating and controlling speech. If certain factors prevent one hemisphere from dominating and controlling language, both hemispheres will attempt to control the function in an uncoordinated and inappropriate way, which leads to the occurrence of stuttering.

This theory was originally proposed by Orton and Travis in the 1920s. The theory essentially explains that in the brains of individuals who stutter, neither hemisphere dominates speech control. (Kashif, 2010, p. 92)

Orton and Travis add that the speech muscles have bilateral innervation, meaning these muscles receive impulses from both cerebral hemispheres. For smooth speech, the impulses sent from the brain to the muscles must be synchronized, which occurs when one hemisphere (usually the left) takes over monitoring. According to Orton and Travis, individuals who stutter have a deficiency in cerebral dominance, which leads to a disturbance in the rhythm of bilateral motor impulses for speech. (Rondal & Seron, 2003, p. 513)

Travis based his theory on a number of facts, including:

- The brain waves of individuals who stutter are bilaterally equal in shape and amplitude,

- EEG recordings showed harmony in brain activity (in both hemispheres) during stuttering, and the opposite occurs during natural speech,

- There is an increase in latent brain energy during stuttering.

Travis explains these facts by stating that when a person stutters, brain waves in both hemispheres appear similar, and when they speak fluently without stuttering, the waves appear different. A child tends to stutter in speech due to the absence of dominance by one side of the brain in controlling the motor activities involved in speech. (Rakza & Al-Hammadi, 2018, p. 12)

It can be concluded that individuals who suffer from stuttering are characterized by a lack of cerebral dominance, meaning there is no control or dominance of one side over the other.

5. Laterality:

This refers to the idea that forcing a left-handed child to use their right hand instead may cause stuttering. This is because the part of the brain responsible for speech is linked to the part that controls hand movements (the left hemisphere of the brain is responsible for language and the right side of the body, and vice versa). If the individual's neurological and physiological nature is contradicted, it can lead to the emergence of stuttering. (Ben Arbia & Chewal, 2016, p. 60)

In the same context, Orton and Travis connect cerebral dominance with hand use. They started from the observation that in non-stuttering individuals, the left hemisphere is responsible for language and the motor aspects of speech. Forcing a left-handed or ambidextrous person to become right-handed leads to stuttering. Based on this, the researchers explained that the majority of people who stutter are ambidextrous, which explains the deficiency in cerebral dominance.(Rondal & Seron, 2003, p. 513)

Williams (1974) also explains that the brain area responsible for speech control is linked to the area that controls hand movements. Therefore, forcing a child to use a hand they have not previously used leads to a disorder in the nervous system related to speech, which contributes to the appearance of stuttering. (Amin, 2017, p. 19)

We conclude that the physiological and neurological nature of the brain determines the preferred hand, and using a different one affects speech fluency.

6. The Genetic Theory:

There are several viewpoints regarding the relationship between stuttering and heredity—some affirm it, while others deny it. Some believe that stuttering is a genetic predisposition that makes the individual more susceptible to developing it.

According to the CFP website, many studies indicate that individuals who stutter have a family history of the condition. A review of 28 studies by researchers Perez and Stoeckle (2016) estimated that 30% to 60% of people who stutter have a family history, compared to less than 10% in the control group. Male relatives are more likely to be affected than female relatives. Stuttering is associated with changes in the following chromosomes: 9, 10, 12, 13, and 18. Other studies have indicated a link between 9 different genes and stuttering. (Perez, Stoeckle, 2016, p.298)

Regarding twins, stuttering affects identical twins more than fraternal twins.(Rondal & Seron, 2003, p. 514)

In the same context, Espire and Gliford (1983) explain that stuttering occurs due to genetic influence, although this influence ranges from 36% to 65%, especially among first-degree relatives (such as parents and siblings). However, they believe that the hereditary factor is not necessarily based on genetic factors alone, as environmental factors are considered more important. (Amin, 2017, p. 19)

Kang and Drayna (2010) confirm a link between stuttering and genetics, Developmental stuttering appears in recessive genes, particularly on the following chromosomes: 1, 3, 5, 9, 13, 15, 18, and 12. Chromosomes 5 and 15 are associated with persistent forms of stuttering in males, whereas chromosomes 2 and 7 and chromosome 9 are linked to transient stuttering in females. (Monfrais-Pfauwadel, 2014, p.11)

Family studies have identified six candidate causal stuttering genes: GNPTAB, GNPTG, and NAGPA, DRD2; AP4E1; and CYP17A1 However, efforts to replicate these findings in other families or global populations have not yet validated the observed effects. (Below, Polikowsky, Scartozzi, & others, 2023, p.3)

Another study by researchers Riaz, Steinberg, Ahmed, Pluzhnikov, Riazuddin, and colleagues (2005) revealed a strong relationship between genes on chromosome 12 and familial stuttering. In 2006, Wittke-Thompson et al. published a study indicating that chromosome 15 is linked to the persistence of stuttering. Furthermore, stuttering is related to chromosome 7 in males, and to chromosome 15 in females. (Stamurai, 2020)

According to the Diagnostic Manual for Neurodevelopmental Disorders, the risk of developing stuttering among first-degree relatives of individuals with childhood-onset fluency disorder is more than three times higher than in the general population. (Awda & Fakiri, 2016, p. 71)

In 1999, Yairi conducted a study on the information confirming the role of genetic and hereditary factors in the development of speech disorders and stuttering in children. He emphasized that children who stutter are strongly affected by the interaction between age and gender, and that research confirms that a child who stutters is the result of both genetic inheritance and environmental circumstances. Stuttering tends to appear more prominently when there is a family history of the disorder. The researcher rejected the idea of addressing stuttering through spontaneous or natural recovery during childhood. (Kashif, 2010, p. 99)

We conclude that stuttering results from hereditary factors, meaning that the likelihood of developing the disorder varies according to the degree of kinship with the affected individual.

Secondly: Psychological and Behavioral Factors: These include:

1. **Neurosis Theory:**

According to this theory, stuttering is a neurotic disorder that represents a partial personality disorder and is reflected in a speech disorder. Stuttering results from unconscious conflicts, and when the individual attempts to speak, their mouth movements resemble the original breast-sucking movements during infancy. In this regard, Freud states that children have a type of oral behavior, and if they are weaned harshly and early from an emotionally disturbed mother, the child will not naturally satisfy their oral needs. Therefore, those needs remain latent in the form of repression, which later manifests as disguised behaviors such as overeating, fast speech, and other oral forms. (Ben Arbia & Chewal, 2016, p. 61)

The neurosis theory also explains stuttering as an expression of the anxiety experienced by the person who stutters. Neurotic behavior is characterized by unpleasant feelings, the inability to accept them, or the emergence of behaviors expressing them. Anxiety—which constitutes a large part of neurotic behavior—arises when there is a strong conflict between opposing needs, and the individual cannot resolve this conflict. (Al-Jarwani & Seddik, 2013, p. 70)

Freud's theory of neurosis confirms that all neurotic responses are symptoms of unconscious conflict rooted in psychosexual development during early childhood. A child who does not progress normally through stages such as the oral or anal stage, or who is overly attached to one parent (Oedipus complex), becomes fixated at that stage. For instance, early weaning or traumatic toilet training may cause fixation in the oral or anal stage. Later on, psychological conflicts and frustrations begin to appear, leading the individual to regress to early fixation stages. Since behaviors from these childhood stages are socially unacceptable, individuals repress them. However, the unacceptable drives from those stages, once suppressed, are transformed into acceptable neurotic symptoms such as stuttering, fear, or hysterical responses. (Kashif, 2010, p. 109)

We conclude that stuttering is linked to conflicts arising from deficiencies or disruptions in a previous stage of the child's psychosexual development, and this deficiency leads to a disorder in verbal fluency.

2. Classical Conditioning Theory:

The famous Russian psychologist Pavlov found that classical conditioning occurs when a stimulus (punishment) that naturally elicits a response like anxiety is paired with another stimulus (the speaking situation) that does not trigger anxiety. If the two stimuli (punishment and speaking situation) are paired enough times, the speaking situation alone will begin to elicit an anxiety response. The two-factor theory proposes that people who stutter have been conditioned to experience anxiety in speaking situations. This anxiety leads to a breakdown in fluency, which manifests as repetition of part of a word, prolongation of sounds, etc. (Kashif, 2010, p. 108)

Thus, this theory suggests that stuttering is the result of unconditioned failure in speech due to the speaker's anxiety about speaking. If this happens, the person will stutter in any anxiety-provoking situation. Wolpe (1958) viewed stuttering as a symptom of classically conditioned speech fears. Therefore, he treated stuttering using systematic desensitization based on reciprocal inhibition, through which the anxiety response is replaced with a competing response—relaxation.

Sheehan proposed the conflict avoidance theory to explain and treat stuttering. According to this theory, the person who stutters is seen as experiencing a conflict between the desire to speak and the desire not to speak. When the motivation to avoid speaking is strong, the person remains silent. When the motivation to speak is stronger, they speak fluently. When both motivations are equal, the person experiences conflict—resulting in stuttering. Regardless of which motivation dominates (speaking or silence), the individual reinforces the behavior by reducing anxiety. (Al-Zriqat, 2005, p. 239)

It is a need for oral and anal gratification, a latent expression of hostility, suppression of feelings of threat and fear of castration, aggression, and repressed hostility. It is also a tool for attracting attention and sympathy, and a defensive mechanism against threatening thoughts.

Sheehan (1986) distinguishes five levels of conflict as follows:

- **First level:** the word level – The conflict lies in the desire to say the word or not say it.
- **Second level**: the situational level – The conflict is in whether to enter or avoid the fear-inducing situation.
- **Third level:** the emotional content level – The conflict arises from the emotional content of the words as part of vocal features, and is represented in the unconscious drive to avoid speaking.
- **Fourth level:** the relationship level – The conflict is between the person who stutters and the listener.
- **Fifth level:** ego protection level – Stuttering serves as a lifelong defense mechanism that protects the individual from danger.(Rakza & Al Hammadi, 2018, p. 19)

Brutten (1986) believes that stuttering is a disorder of speech fluency resulting from classically conditioned emotional responses in speech. The resulting anxiety leads to speech avoidance. The problem of stuttering arises when a child speaks in a difficult situation, such as during the father's anger. Therefore, stimuli in the child's context—such as sadness—become negative emotional stimuli that later evoke stuttering or its symptoms. (Al-Zriqat, 2005, p. 239)

We conclude that stuttering is linked to classically conditioned emotional responses, associated with anxiety-inducing situations and negative emotions.

3.Behavioral Theory:

Proponents of this theory view stuttering as a learned behavior, either through reinforcement or imitation (a conditioned stimulus: other people's speech). Young children (aged 3–4 years) experience speech fluency disruptions during their early speech practice because they are unable to articulate sounds properly and have a limited vocabulary.

Johnson believes that disfluency coupled with negative listener reactions is the true cause of stuttering. In other words, when a child speaks and stutters, and is harshly criticized by others, this reinforces the disorder and supports its reoccurrence—this is known as the interaction theory.

Behaviorists attempted to explain stuttering as a learned behavior. Some attributed it to its association with a conditioned stimulus (other people's speech), which extracts the stuttering response from the individual. Others attributed it to the reinforcement resulting from stuttering itself, such as drawing attention or concern from others. Still others see it as an avoidance behavior from an undesirable stimulus that causes painful emotions and negative responses such as shyness, tension, or anxiety. As a result, the individual stutters as a way to avoid the pain they experience. (Al-Jarwani & Seddik, 2013, p. 54)

Therefore, it is essential to ensure the development of appropriate behaviors that promote healthy language, focusing on positive aspects of speech and avoiding mistreatment of the child, as punishment, intimidation, and yelling can reinforce negative behaviors, including stuttering.

4. Stuttering Anticipation Theory:

Wischner (1956) focused on studying one of the most prominent observations related to the modification of stuttering, known as the **anticipated effect**.

George Wischner developed his theory based on the following assumptions:

First: Stuttering behavior is reinforced due to its association with a relative decrease in tension and anxiety that accompanies the reduction of fear of speaking. He hypothesized that a word that evokes fear triggers a state of anticipation (anxiety), and the occurrence of stuttering on that word is reinforced due to the decrease in tension once the feared word is completed.

Second: The person who stutters displays different patterns of avoidance behaviors. These behaviors are often closely tied to specific words, meaning that the individual intentionally develops a broad vocabulary and, when encountering a feared word, substitutes it with an alternative word.

Third: The anticipation phenomenon in stuttering behavior implies the belief that the person who stutters possesses a mechanism that is built and reinforced not based on reduced anxiety and tension, but on confirming the accuracy of the anticipation. In this case, the mechanism is perceived in the imagination of the person who stutters as self-confirmation of the anticipated stutter.(Amin, 2017, p. 24)

Wischner indicated that a child, due to the negative and incorrect evaluation of their lack of fluency, begins to feel anxious about their speech. This anxiety ultimately becomes conditioned to a specific sound or word, the act of speaking, or specific speaking situations, leading to avoidance behaviors known as stuttering. The main issue in Wischner's theory is the difficulty in explaining how a parent's inappropriate reaction to a child's natural disfluency can trigger a chain of events that leads to anxiety and avoidance. (Kashif, 2010, p. 107)

Murray et al. (1987) were among those who emphasized the idea of anticipation as an important and influential factor in the onset of stuttering. He stated that the idea of stuttering itself leads to its occurrence, as the individual, when expecting speech difficulties, becomes anxious about speaking, which in turn results in stuttering—this is referred to as the vicious cycle. (Amin, 2017, p. 24)

Third: Environmental and Social Factors:

Environmental and social factors play an active role in causing a disruption in speech fluency. Conture (1982) believes that the environment in which children grow up, especially the internal and external family surroundings and the pressures a child is exposed to, affects their linguistic abilities. The researcher adds that the child's social and home environment, particularly the parents, do not cause stuttering themselves, but they contribute to its maintenance and development from its initial stages to the stage of real stuttering. (Amin, 2017, p. 27)

1. Diagnostic Error Theory:

This theory suggests that stuttering begins with the diagnosis made by parents, particularly the mother. Most children often experience disfluency during early stages of development, and the parents misdiagnose this normal disfluency as stuttering. The parents' anxiety reflects onto the child, who begins to focus on the way they speak

and starts avoiding talking out of fear of mockery or punishment. Here, normal disfluency becomes pathological stuttering due to the parents' hasty misdiagnosis. Thus, one might say that stuttering is born in the mother's ear, not in the child's mouth. (Al-Jarwani & Seddik, 2013, p. 76)

Johnson emphasizes that stuttering is an avoidant reaction characterized by anticipation, fear, and intense tension. He explains that the onset of stuttering in children arises from a misjudgment of normal disfluency. Almost all children stumble in speech occasionally, but parents who wrongly interpret these disfluencies as stuttering and show excessive concern about their child's speech may transmit this anxiety to the child. Once the child becomes aware of the parents' anxiety regarding their speech, they begin to feel anxious themselves and fear speaking situations—leading to stuttering. Emotional states, anxiety, and fear become associated with speaking situations and generalize to similar situations, becoming a chronic tendency and a habitual pattern in the child. (Amin, 2017, p. 22)

2.Demands and Capacities Theory – Starkweather (1987): According to the two researchers, stuttering occurs when the environmental demands exceed the child's fluency capacities. These capacities include motor, cognitive, and linguistic knowledge necessary for normal speech.(Rondal & Seron, 2003, p. 514)

3. Other Environmental Factors:

Morley adds that there are environmental and personal factors that may lead to stuttering, such as:

- **Sudden trauma:** Records of some individuals who stutter show a correlation between severe trauma or frightening experiences during childhood and the development of stuttering.

- **Speech awareness:** Self-awareness related to speech may trigger the onset of stuttering—for instance, being asked to tell a story in front of strangers or at a school event. Comments on the child's speech—whether praise or ridicule—can lead to excessive self-consciousness in some children, impairing their fluency.

- **Correction of expressive flaws:** Attempts by parents or others to correct the child's speech errors during language development can lead to feelings of frustration and constant fear of failure in speech.

- **Imitation:** A young child is rarely aware of verbal disfluency, so they may unconsciously imitate the stuttering of another child or a parent with speech disfluency, especially when there is a genetic predisposition. (Amin, 2017, p. 28)

Among the environmental factors within the family and school context, Al-Jarwani and Seddik (2013) mention the following:

- Parents rushing their children to speak during the early years without considering their limited speech abilities.

- The use of fear and physical punishment when the child exhibits any speech deviation.

- The child reverting after the age of four to infantile speech patterns, encouraged by the parents as a result of overindulgence.

- Neglect by the parents and the child's lack of affection, love, and parental care.

- Teaching the child multiple languages at the same time.

- The teaching methods used by the teacher, whether by avoiding calling on the child to spare them embarrassment or by interrupting them because of delayed responses due to stuttering.

- Academic failure, which can contribute to the development and reinforcement of stuttering. (Al-Jarwani & Seddik, 2013, p. 58)

Commentary on Theories Explaining Stuttering:

We have previously presented a comprehensive analysis of stuttering theories, where we reviewed a wide range of explanations that interpret the causes of stuttering from different angles, including organic, neurological, psychological, behavioral, genetic, and environmental factors.

Stuttering, then, is a disorder that affects the flow and fluency of speech. It is also known as a fluency disorder or verbal fluency disorder. It is easy to diagnose, especially since its symptoms are clear, but accurate diagnosis depends on the skills of the speech-language pathologist, as it includes several systematic steps aimed at measuring the quality of fluency in terms of repetitions, pauses, and time duration. The person who stutters typically shows repetitions, blocks, prolongations, and speech blocks that hinder the completion of speech effectively. These signs are accompanied by other physical symptoms that vary from person to person, such as eye blinking, tics, lip or facial tremors, head movements, arm movements, breathing irregularities, clenched fists, and facial redness.

Many scholars have attempted to explain stuttering using various theories. Some attributed it to biochemical factors, associating it with blood chemistry composition and considering it a type of convulsive disorder. Others attributed it to neurological factors related to the axon of the nerve cell, where a deficiency in myelin (the myelin sheath) leads to disruption in fluency. Another group showed that stuttering occurs in the absence of cerebral dominance, where fluent speakers are distinguished by dominance of one brain hemisphere over the other—a trait absent in people who stutter.

The same idea was further developed by researchers linking it to the dominant brain hemisphere, which determines hand dominance. They explained stuttering as a result of violating the brain's physiological nature—for example, forcing a left-handed child to use the right hand.

Another group viewed stuttering as an internal conflict, where the person who stutters becomes a victim of a struggle between the desire to speak and the desire to remain silent. The result is a sense of helplessness and fear about speaking, making fluent speech extremely difficult.

Some researchers believed stuttering results from anxiety and fear, which arises from parents' incorrect assessment of their child's fluency. They mistakenly interpret normal disfluency as stuttering and express excessive concern about their child's speech. This anxiety can be transferred to the child, resulting in a fluency disorder.

Other scholars linked stuttering to genetic factors, highlighting the role of family history, twin studies, and male gender, all of which increase the likelihood of stuttering. They also identified specific genes responsible for the disorder.

The behavioral theory highlights its role and relationship with stuttering by explaining it as a learned behavior. Negative behaviors can lead to the emergence of the disorder. On the other hand, the neurotic theory interprets stuttering as a suppression of certain oral needs due to not being fulfilled during early stages—i.e., the infant being weaned early and abruptly, which creates an unmet need for breast sucking. As a result, oral movements remain suppressed and re-emerge later in the form of a fluency disorder.

Stuttering is also linked to numerous environmental factors at home and school, such as reprimanding and mocking, parenting styles, imitation, correcting expressive defects by parents, bilingualism, sudden trauma, and forcing the child to use language beyond their capabilities.

Based on what has been previously discussed, it becomes clear that multiple factors contribute to stuttering. Many theories have tried to explain fluency disorders, and various researchers have presented their modern scientific perspectives. Although stuttering has multiple causes, it shares common diagnostic criteria through its clear and consistent symptoms.

This study presented a scientific review of the theoretical approaches explaining stuttering, showing that it is a multifactorial disorder that occurs as a result of a complex interaction between:

- **Organic factors** (genetic, neurological, biochemical)
- **Psychological factors** (anxiety, unconscious conflicts)
- **Environmental factors** (family stress, misdiagnosis)
- **Behavioral factors** (learning, imitation, conditioning)

Therefore, effective treatment requires a comprehensive understanding of these contributing factors and the theories explaining them.

Conclusion:

From what has been presented above, we conclude that stuttering is a disorder of speech fluency, characterized by repetitions, prolongations, pauses, and other accompanying symptoms. We understand in our conclusion that no single theory can fully explain all cases of stuttering, which highlights its complex nature. Instead, multiple theories complement one another, including: the biochemical theory, the neurological theory, the psycholinguistic theory, the cerebral dominance theory, the neurotic theory, the classical conditioning theory, the demands and capacities theory, the behavioral theory, the genetic theory, the anticipatory struggle theory, and finally, the environmental and social factors theory. All of these theories are used to develop various treatment approaches, and thus, a better understanding of the causes of stuttering is essential to provide more effective support for individuals affected by it.

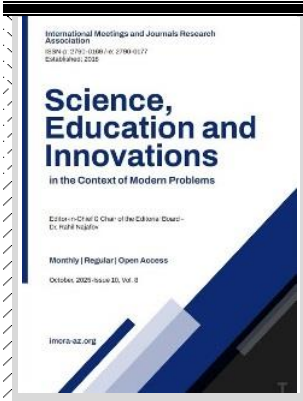
In light of the explanatory theories of stuttering and the multiple influencing factors, the following recommendations can be made to improve diagnosis, treatment, and support for people who stutter:

- Conduct more longitudinal studies to understand the development of stuttering and its relationship to genetic and neurological factors.
- Strengthen research on the interaction between psychological and biological factors in the emergence of stuttering.
- Develop accurate diagnostic tools using modern technology for early detection of the disorder.
- Raise awareness among families and teachers about stuttering and how to manage it appropriately.
- Provide psychological, social, and educational support for individuals who stutter to ensure healthy development.

References

1. Amin, S. M. (2017). *Stuttering Severity Diagnostic Scale (Manual)*. Cairo: Anglo Egyptian Bookshop.
2. Al-Jarwani, H. I., & Seddik, R. M. (2013). *Stuttering Disorders: A Diagnostic and Therapeutic Perspective*. Egypt: Dar Al-Maaref.
3. Al-Muaigel, I. A., & Al-Muaigel, R. I. (2022). *Speech and Language Disorders*. Riyadh: International Publisher for Publishing and Distribution.
4. Al-Zriqat, I. A. F. (2005). *Speech and Language Disorders: Diagnosis and Treatment*. Amman: Dar Al-Fikr.
5. Awda, M. M., & Fakiri, N. S. (2016). *The Diagnostic Manual for Neurodevelopmental Disorders*. Cairo: Anglo Egyptian Bookshop.

6. Ben Arbya, R., & Chewal, N. (2016). *Introduction to Orthophony: The Science of Language and Communication Disorders*. Algeria: Alpha for Documentation.
7. Below, J., Polikowsky, H., Scartozzi A., & others. (2023). *Discovery of 36 loci significantly associated with stuttering* [Preprint]. Research Square. https://doi.org/10.21203/rs.3.rs-2799926/v1
8. Kashif, I. F. (2010). *Speech and Stuttering Problems: A Guide for Parents and Teachers*. Cairo: Modern Book House.
9. Monfrais-Pfauwadel M., C. (2014). *Stuttering, stutterings: A Clinical and Therapeutic Manual. Belgium: De Boeck-Solal*
10. Nang, C. (2012). *Cause or consequence: an investigation of the factors determining the onset and development of stuttering*. https://research-repository.uwa.edu.au/files/3219170/Nang_Charn_Ying_2012.pdf
11. Ooreka. (n.d.). *Stuttering*. Retrieved from: https://orthophonie.ooreka.fr/comprendre/begaiment
12. Packman, A. (Director & Ed.). (2013). (Nadel, J., Trans.). *The Cause of Childhood Stuttering. Journal de l'Enfance*, (3), 207–216. https://www.cairn.info/revue-enfance2-2013-3-page-207.htm
13. Perez, H. R., & Stoeckle, J. H. (2016). *Stuttering: Clinical and Research Updates. Canadian Family Physician*, *62*(6), e297–e303. https://www.cfp.ca/content/cfp/62/6/e297.full.pdf
14. Rakza, S., & Al-Hammadi, F. S. (2018). *Stuttering: Nature and Treatment*. Algeria: Jusour Publishing.
15. Rondal, J. A., & Seron, X. (2003). *Language Disorders: Theoretical Foundations, Diagnosis, and Rehabilitation*. Belgium: Mardaga.
16. Stamurai, T. (2020). *Developmental and Acquired causes of Stuttering in Adults:* https://stamurai.com/blog/causes-of-stuttering-in-adults/



Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Impact of Women's Employment on the Practice of Exclusive Breastfeeding

(A Field Study at the Public Hospital Institution - Ksar Chellala - Tiaret Province)

Otmane Terchoun
Phd
Faculty of Social Sciences, Department of Sociology, Abou El Kacem Saadallah Algeria 02, Social Change Laboratory
Algeria
E-mail: otmane.terchoun@univ-alger2.dz ; orcid : 4905-7885-0006-0009

Djaouida Amira
Professor
Faculty of Social Sciences, Department of Sociology, Abou El Kacem Saadallah Algeria 02, Social Change Laboratory
Algeria
E-mail: djaouida.amira@univ-alger2.dz ; orcid : 0000-0001-8378-2295

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords breastfeeding, exclusive breastfeeding, infant, women's employment, child-rearing.

Abstract

The rate of exclusive breastfeeding in Algeria is among the lowest in the world, having declined in recent years in parallel with the increase in women's employment in the country. This situation prompted us to question the impact of women's employment on the practice of exclusive breastfeeding. To address this issue, we conducted a field study at a hospital in Tiaret Province, involving 150 mothers of infants aged between 6 and 12 months. The findings revealed a relationship between women's employment and the practice of exclusive breastfeeding, as stay-at-home mothers were more likely to exclusively breastfeed their infants for six months.

Citation. Otmane T., Djaouida A. (2025). The Impact of Women's Employment on the Practice of Exclusive Breastfeeding (A Field Study at the Public Hospital Institution - Ksar Chellala - Tiaret Province). *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 324–333. https://doi.org/10.56352/sei/8.11.25

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 18.01.2025	Accepted: 12.05.2025	Published: 31.08.2025 (available online)

Introduction

It has been scientifically and medically proven that breastfeeding is of great importance and provides significant benefits to the health of both the child and the nursing mother, whether physically, psychologically, or in terms of disease prevention. Breast milk offers complete and optimal nutrition for infants, as it strengthens their immune system and protects them from potentially fatal diseases such as diarrhea and pneumonia. Breastfeeding also reduces the likelihood of infants being exposed to unsafe food or water, thereby saving the lives of millions of children.

Research indicates that exclusive breastfeeding during the first six months, along with continued breastfeeding throughout the first year, can save the lives of 1.3 million children each year — more than 3,000 children every day. Furthermore, if breastfeeding is continued alongside appropriate complementary feeding until at least the age of two, an additional 500,000 children can be saved annually, which is equivalent to around 500 more children every day. Experts strongly advise against the use of breast milk substitutes during this period, particularly infant formula.

Infant formula, as we know it today, is an alternative to breast milk primarily made from cow's milk and consists of nutrients such as proteins, iron, sodium, and fats. Although it contains essential nutrients for infants, its protective properties against diseases remain far lower compared to breast milk. Moreover, the risks associated with its regular consumption by newborns are high. According to the World Health Organization (WHO) and UNICEF, breast milk substitutes pose serious risks to infant digestion, as they often cause fatal infections. Conditions such as diarrhea, colic, respiratory illnesses, diabetes, and even obesity are much more common among children who are not breastfed.

For this reason, the World Health Organization has emphasized regulating the marketing of breast milk substitutes in markets and advertisements through the adoption of the *International Code of Marketing of Breast-milk Substitutes*. This aims to increase breastfeeding rates, which is considered an essential requirement for ensuring adequate nutrition for every child.

(https://www.unicef.org/cotedivoire/recits/lallaitement-maternel-est-il-un-choix)

1. Problem Statement:

The World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) have estimated that around ten million children die each year due to gastroenteritis and malnutrition resulting from the use of infant formula. Consequently, these international health organizations banned such advertisements and labeled the producers and exporters of infant formula as "child killers of the Third World." This is because the lives of these children could be saved simply by switching to breastfeeding and abandoning formula substitutes.

Algeria is among the countries suffering from low rates of exclusive breastfeeding during the first six months of a child's life. According to the Sixth Multiple Indicator Cluster Survey conducted in 2019, the rate was estimated at **28.7%** (Ministère de la santé et UNICEF, 2020, p. 48). Although this represents an improvement compared to 2005, when the rate was **6.9%** (Ministère de la santé et autres, 2006, p. 68), and **25.7%** in 2013 (Ministère de la santé et autres, 2015, p. 7), the figures remain low.

At the same time, the proportion of economically active women in Algeria has risen, increasing from **9.97%** in 1987 to **15%** in 1999, then **17%** in 2006, and reaching **19%** in 2015 (Office Nationale de Statistique, 2015, p. 3).

For this reason, our study seeks to highlight the importance of breastfeeding, particularly during the first six months of a child's life, and to explore the relationship between exclusive breastfeeding and maternal employment.

Thus, the key question is: **Does maternal employment contribute to the low practice of exclusive breastfeeding?**

2. Definition of Concepts:

2.1. Breastfeeding:

Breastfeeding is the process of feeding the newborn with the milk produced by the female breast through suckling. It is an innate process shared between humans and other mammals, continuing from birth until weaning (Mohamed, 1992, p. 180).

2.2. Exclusive Breastfeeding:

Exclusive breastfeeding means that the infant is fed solely on the mother's milk, without receiving any other liquidsno t even wate or solid foods, with the exception of oral rehydration solutions, or drops/syrups of vitamins, minerals, or medicines (World Health Organization, 2011, p. 2).

2.3. Working Woman:

A working woman is defined as a woman who practices a profession or occupation outside the home, dedicating several hours of her time in exchange for a wage.

3. Methodology Adopted in the Study

3.1. Method:

In this study, we relied on the descriptive-analytical method, as it is the most appropriate approach for our research topic. It can be defined as "one of the forms of organized scientific analysis and interpretation aimed at describing a specific phenomenon or problem and portraying it quantitatively, or by collecting standardized data and information about the phenomenon or problem, classifying it, analyzing it, and subjecting it to in-depth study" (Sami, 2000, p. 324). We collected data from the field, then processed, categorized, and analyzed it using simple and cross-tabulated statistical tables to determine the impact of independent variable indicators on the dependent variable indicators, namely exclusive breastfeeding.

3.2. Questionnaire:

We employed the questionnaire technique in our study, which consisted of 32 questions divided into three sections. The first section was dedicated to personal information about the respondent, the second section concerned information about her infant, and the third section included questions about whether or not she was employed.

3.3. Sample:

The selection of a specific type of sample is dictated by the nature of the study, its problem, and hypotheses. Accordingly, we needed to choose a sample of women of childbearing age [15–49 years] who had an infant between 6 and 12 months old. Since there was no sampling frame available (i.e., the total number of mothers with infants under 12 months was unknown), we opted for a purposive sample, which falls under non-probability sampling. Maurice Angers defines it as "a sample in which the research population is unknown, and therefore the degree of representativeness of the sample cannot be estimated" (Maurice, 1997, p. 229).

We conducted the study at the Public Hospital Institution of Ksar Chellala, specifically in the Pediatrics Department, where mothers stay with their children, and in the Preventive Medicine Department, where children are vaccinated, as mothers usually bring their infants for vaccination.

Our research population consisted of 150 women of childbearing age (15–49 years), all of whom had at least one infant aged between 6 and 12 months. We restricted the age of infants for two reasons: first, the infant had to be at least six months old since the focus of our study required it; second, we capped the age at 12 months to ensure that mothers could easily recall relevant details within the reference period. This made it easier for them to answer precise questions such as the date breastfeeding started, the date when foods other than breast milk were introduced, and the duration of exclusive breastfeeding.

The fieldwork lasted two and a half months and was divided into two phases. The first phase spanned from April 12, 2015, to July 2, 2015, during which we interviewed 27 women and completed 27 questionnaires. In the end, we obtained 150 questionnaires, at an average of two per day. Sometimes, we managed to interview up to five women per day who met the study criteria, while on other days, we found none. It is worth noting that the interviews and the completion of questionnaires were conducted by two nurses from the health sector who had been trained for this task, given a comprehensive overview of the research topic, and were accompanied throughout the fieldwork period.

4. Analysis of Study Results

Table 1: The Relationship Between the Mother's Professional Status and the Timing of Initiating Breastfeeding After Birth

Start of Breastfeeding Professional Status	Immediately After Birth		After 1 to 6 Hours		After 6 to 24 Hours		After 24 Hours		Total	
	K	%	K	%	K	%	K	%	K	%
Working	11	15.71	19	27.15	35	50.00	5	7.14	70	100
Not Working	33	41.25	17	21.25	23	28.75	7	8.75	80	100
Total	44	29.33	36	24.00	58	38.67	12	8.00	150	100

From the data presented in the table, it is evident that the general trend shows that the majority of respondents initiate breastfeeding between six and twenty-four hours after birth, at a rate of **38.67%**, compared to **8%** who begin breastfeeding after twenty-four hours of delivery.

When introducing the independent variable, namely maternal employment, we observe that half of the working mothers initiated breastfeeding only after six to twenty-four hours, compared to **28.75%** among non-working

mothers. Meanwhile, the majority of non-working mothers began breastfeeding immediately after delivery (**41.25%**), compared to only **15.71%** of working mothers who did so.

The initiation of breastfeeding after delivery is influenced by the mother's professional status, as revealed statistically. This can be explained by the fact that working mothers who genuinely wish to succeed in breastfeeding often face work as an obstacle, reducing their chances of initiating breastfeeding immediately after birth. Working mothers may also have already decided to introduce infant formula early, and therefore see no necessity to start breastfeeding immediately, leading to delays. In contrast, non-working mothers are more eager to ensure successful breastfeeding, as they have no professional commitments outside the home. Their awareness of being able to spend all their time with their child in the future, along with their strong desire to succeed in breastfeeding particularly exclusive breastfeeding during the first six months serves as a strong motivation to begin breastfeeding immediately after birth.

Table 2: The Relationship Between the Mother's Professional Status and the Duration of Exclusive Breastfeeding.

Duration of Exclusive Exclusivity Employment Status	0–1 month (K / %)		2–3 months (K / %)		4–5 months (K / %)		6 months (K / %)		Total (K / (%)	
	K	(%)	K	(%)	K	(%)	K	(%)	K	(%)
Working	3	4.3	45	64.3	6	8.6	16	22.9	70 /	100
Not working	14	17.5	29	36.3	10	12.5	27	33.8	80	100
Total	17	11.3	74	49.3	16	10.7	43	28.7	150	100

Through the statistical reading of the table, it appears that its general trend indicates that the majority of the surveyed women exclusively breastfed their children for a duration ranging from 2 to 3 months at a rate of 49.3%, compared to 10.7% of the surveyed women who exclusively breastfed their children for a duration ranging from 4 to 5 months.

When introducing the independent variable represented by the mother's employment status, it becomes clear that the majority of working mothers exclusively breastfed their children for a period of 2 to 3 months at a rate of 64.3%, compared to 4.3% who practiced the same pattern for a duration ranging from 0 to 1 month. Meanwhile, 36.3% of non-working women exclusively breastfed their children for two to three months, compared to 12.5% who practiced the same type of breastfeeding for 4 to 5 months. In general, we notice that there is a relationship between the two variables, which was confirmed through the calculation of the Chi-square test, where its value was estimated at 13.786, which is greater than the tabular Chi-square at the degree of freedom 3 and the significance level 0.05 estimated at 7.86. As for the degree of the relationship between the two variables, when calculating the contingency coefficient, it was estimated at 0.290, meaning that there is a somewhat weak relationship between the two variables.

It seems to us that the mother's employment does affect the practice of exclusive breastfeeding, and although the effect is somewhat weak as mentioned earlier, this weakness in the effect may be due to the influence of other factors, which prevents us from precisely determining the effect of the mother's employment status on the practice of exclusive breastfeeding. This is what we seek to determine by breaking down this variable into several other indicators in order to understand the real relationship between the two variables.

Table No. 3: The Relationship Between the Mother's Employment Status and the Type of Nutrition Provided to the Child During the First Six Months of Life,

	Exclusive Breast	Mixed	Breast feeding +	Mixed Feeding +	Total

Type of Nutrition Provided to the Child / Employment Status	feeding (K)		Feeding (K)		Other Food (K)		Other Food			
	K	(%)	K	(%)	K	(%)	K	(%)	K	(%)
Working	16	22.9	45	64.3	1	1.4	8	11.4	70	100
Not working	27	33.8	38	47.5	3	3.8	12	15.0	80	100
Total	43	28.7	83	55.3	4	2.7	20	13.3	150	100

surveyed women provided mixed feeding to their children during the six months following childbirth, at a rate of **55.3%**, compared to **2.7%** of the surveyed women who provided breastfeeding combined with other food during the same period.

When introducing the independent variable represented by the mother's employment status, it was found that the majority of working mothers provided mixed feeding to their child in the first six months of life at a rate of **64.3%**, compared to **1.4%** of them who provided breastfeeding combined with other food. Meanwhile, **47.5%** of housewives provided mixed feeding to their child, compared to **3.8%** of them who provided breastfeeding combined with other food.

This disparity in percentages can be explained by the changing social role of Algerian women as a result of the economic, social, and cultural transformations that society has experienced. Whereas women used to remain at home, caring for the upbringing of children and fulfilling the needs of the husband and the family within the framework of the social division of labor between the spouses, today, after attaining educational levels, women have entered the labor market alongside men and spend most of their time outside the home. This situation affects their performance and relationships within the household. This is clearly reflected in the results of this table concerning the rate of exclusive breastfeeding during the first six months. Although the rate is low among both categories, it is noticeably lower among working women.

Table No. 4: The Relationship Between the Nature of the Mother's Working Hours and the Duration of Exclusive Breastfeeding During the First Six Months.

Duration of Exclusive Breastfeeding / Nature of Working Hours	0–1 month		2–3 months		4–5 months		6 months		Total	
	K	(%)	K	(%)	K	(%)	K	(%)	K	(%)
Full-time	3	5.0	42	70.0	2	3.3	13	21.7	60	100
Part-time	–	–	3	30.0	4	40.0	3	30.0	10	100
Total	3	4.3	45	64.3	6	8.6	16	22.9	70	100

Through the statistical reading of the data in the previous table, it appears that its general trend indicates that the majority of working women practiced exclusive breastfeeding for a duration of two to three months at a rate of **64.3%**, compared to **4.3%** of them who practiced the same pattern of breastfeeding for a duration ranging from 0–1 month. When introducing the independent variable represented by the nature of working hours, a variation in percentages appears, as most of the surveyed women working full-time practiced exclusive breastfeeding for two to three months at a rate of **70%**, compared to **3.3%** of them who exclusively breastfed their children for four to five months. Meanwhile, the majority of women working part-time practiced exclusive breastfeeding for four to five months, while the remaining percentage was divided between exclusive breastfeeding for two to three months and for four to five months at a rate of **30%** for each duration.

Based on the data of the table and after calculating Chi-square (Khi²), its value was estimated at **16.338**, which is greater than the tabular Chi-square value at the degree of freedom **3** and the significance level **0.05**, estimated at **7.86**. As for the degree of the relationship, when calculating the contingency coefficient, it was estimated at **0.435**, which indicates a moderate relationship between the two variables.

The nature of the mother's working hours affects the breastfeeding process, as observed in the previous table, where surveyed women working part-time had a longer duration of exclusive breastfeeding. This is natural since the mother is closer to her child most of the time, and if she truly intends to succeed in the breastfeeding process, her part-time work does not constitute an obstacle, as she is absent from home for only a short period. She can compensate her child with a feeding upon returning home if she works in the morning, or she can breastfeed him before leaving for work if her part-time shift is in the evening. This situation, however, does not apply to women working full-time, as they are absent from home throughout the entire day, and thus they find themselves compelled to introduce formula milk or other foods to their child.

Table No. 5: The Relationship Between the Proximity of the Mother's Home to Her Workplace Allowing Her to Return at Midday and the Duration of Exclusive Breastfeeding During the First Six Months.

Duration of Exclusive Breastfeeding / Nature of Working Hours	0–1 month		2–3 months		4–5 months		6 months		Total	
	K	(%)	K	(%)	K	(%)	K	(%)	K	(%)
Can return home	-	-	2	10.5	5	26.3	12	63.2	19	100
Cannot return home	3	5.9	43	84.3	1	2.0	4	7.8	51	100
Total	3	4.3	45	64.3	6	8.6	16	22.9	70	100

Through the data of the previous table, it appears that the general trend shows that the majority of working women practiced exclusive breastfeeding for a duration of two to three months at a rate of **64.3%**, compared to **4.3%** of them who practiced the same pattern of breastfeeding for a duration ranging from 0–1 month. When introducing the independent variable represented by the proximity of the workplace to the home, allowing the mother to return to her child at midday, it appears that the majority of the surveyed women who stated that they could return to their children at midday exclusively breastfed their children for **6 months** at a rate of **63.2%**. On the other hand, most of the women who stated that they could not return to their children at midday practiced exclusive breastfeeding for only two to three months at a rate of **84.3%**, while **2%** of them practiced exclusive breastfeeding for four to five months. After calculating Chi-square (Khi²), its value was estimated at **40.952**, which is greater than the tabular Chi-square at the degree of freedom **3** and the significance level **0.05**, estimated at **7.86**. As for the strength of the relationship, when calculating the contingency coefficient, it was estimated at **0.608**, which indicates a strong relationship between the two variables.

The effect of the mother's employment on the practice of exclusive breastfeeding does not appear clearly, as employment is not necessarily an obstacle to breastfeeding. This was observed in the previous table, as the mother who seeks to succeed in breastfeeding, even if she is employed, will always strive for it whenever she has the opportunity and will make use of every available moment. This was the case among the surveyed women who could return to their children at midday, as two-thirds of them succeeded in practicing exclusive breastfeeding for six months, and more than a quarter practiced it for four to five months. This indicates an increase in the duration of exclusive breastfeeding compared to their counterparts who are absent from home throughout the day, most of whom introduce other foods to their children during the second or third month. Breastfeeding hours represent valuable giving if accompanied by other complementary conditions, such as the presence of nurseries near the home or close to the workplace, where the mother can breastfeed the child in the morning and evening, in addition to the morning feeding before leaving for work. In this way, she can make

good use of those two hours, and she does not have to introduce other food, thereby ensuring the continuity of exclusive breastfeeding until the sixth month.

Table No. 6: The Relationship Between the Duration of Maternity Leave and the Duration of Exclusive Breastfeeding During the First Six Months.

Duration of Exclusive Breastfeeding / Duration of Maternity Leave	0–1 month		2–3 months		4–5 months		6 months		Total	
	K	(%)	K	(%)	K	(%)	K	(%)	K	(%)
3 months	3	5.0	44	73.3	1	1.7	12	20.0	60	100
3–5 months	–	–	–	–	5	100.0	–	–	5	100
6 months or more	–	–	1	20.0	–	–	4	80.0	5	100
Total	3	4.3	45	64.3	6	8.6	16	22.9	70	100

It appears that the general trend of the table shows that the majority of working women practiced exclusive breastfeeding for a duration of two to three months at a rate of **64.3%**, compared to **4.3%** of them who practiced the same pattern of breastfeeding for a period ranging between 0–1 month. When introducing the independent variable represented by the duration of maternity leave, it is evident that **73.3%** of women who benefited from 03 months of maternity leave exclusively breastfed their children for two to three months, compared to **1.7%** of them who exclusively breastfed their children for 4 to 5 months. In contrast, all women who benefited from a duration of 03 to 05 months of maternity leave exclusively breastfed their children for 4 to 5 months, while we notice that most of those who benefited from a maternity leave of 06 months or more exclusively breastfed their children for 06 months, compared to **20%** of them who exclusively breastfed their children for two to three months.

We observe a relationship between the two variables, as evidenced by the Chi-square test, which when calculated was estimated at **70.34**, a value greater than the tabular Khi² at 6 degrees of freedom and a significance level of 0.05, estimated at **12.59**. As for the degree of association, when we calculated the contingency coefficient, it was estimated at **0.711**, indicating a strong relationship between the two variables.

Through this variable, represented by the duration of maternity leave, it becomes clearly evident that the mother's employment affects the practice of exclusive breastfeeding. Maternity leave is often limited to only three months, which leads to the introduction of formula milk and other foods to the child immediately, so that the mother can resume her work since her maternity leave limited to 3 months—has ended. This is despite the fact that the National Charter emphasized the necessity of taking into consideration the working conditions of women to enable them to balance between their household duties and their professional duties. It stated that: *"Women represent half of the population capable of working and constitute an important reserve of the labor force in the country. However, the integration of Algerian women into the circles of production must take into account their role as wives and homemakers in building and supporting the family, which constitutes the basic unit of the nation. Moreover, the employment of women must be surrounded by strict laws that preserve motherhood and ensure the security of the family."* (National Liberation Front Party, 1976, p. 168).

Conclusion and Summary:

Through our analysis of the tables, we concluded that stay-at-home mothers are the first to initiate breastfeeding after childbirth at a rate of **41.25%**, compared to only **15.7%** of working women who initiate breastfeeding immediately after delivery. This indicates that the more the mother stays at home, the earlier she begins breastfeeding her child immediately after birth.

We also concluded that the mother's employment does not directly affect the breastfeeding process if certain factors are available that prevent the influence of this variable. When this variable is introduced in general—by dividing it into two categories (mother works – mother does not work) the clear effect on the practice of exclusive breastfeeding only appears after breaking down the mother's work into the indicators we addressed in the analysis of the previous tables.

One of the most important indicators of the mother's work is her working hours. We found that mothers who work part-time or on a reduced schedule had longer durations of exclusive breastfeeding compared to their counterparts who work full-time.

The same result was reached when dividing working mothers according to the proximity of their workplace to their home or to the home of a relative, making it possible for them to return to the child and breastfeed during midday. The duration of exclusive breastfeeding was higher among those who could return to their children during the workday, as they made good use of breastfeeding hours in addition to the midday break. There was a significant difference in the rate of exclusive breastfeeding compared to those whose workplaces were far from their homes. Perhaps the most important indicator that had a significant impact on the practice of exclusive breastfeeding is the duration of maternity leave. We observed that the early introduction of formula milk and other foods to the child occurred immediately after the end of maternity leave so that the mother could resume work. On the other hand, the rate of exclusive breastfeeding for six months rose to **80%** among women who did not return to work until after six months or more had passed since childbirth.

From the above analysis, it can be said that the mother's employment significantly reduces the likelihood of the newborn receiving exclusive breastfeeding during the first six months of life. However, this effect may not occur if certain facilities are provided, such as the availability of nurseries in workplaces, strengthening existing laws regarding maternity leave and breastfeeding hours with additional legislation that guarantees children's rights to adequate breastfeeding without resorting to formula and other foods that cause more harm than benefit, and enabling the mother to exercise her natural biological role.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the research, authorship, or publication of this article.

References:

1. National Liberation Front Party. (1976). *The National Charter*. Algeria.
2. Rifaat, Mohamed. (1992). *The Child*. Lebanon: Ezzedine for Printing and Publishing.
3. Malham, Sami. (2000). *Research Methods in Education and Psychology*, 1st ed. Jordan: Dar Al-Maseera for Publishing, Distribution, and Printing.
4. World Health Organization. (2011). *Exclusive breastfeeding for the first six months of life*. Geneva: World Health Organization.
5. https://www.unicef.org/cotedivoire/recits/lallaitement-maternel-est-il-un-choix

6. Maurice Angers. (1997). *Initiation pratique à la méthodologie en science humaines*. Algiers: Casbah Université.
7. Ministère de la santé et autres. (2006). *Enquête nationale à indicateurs multiples MICS3, Rapport principal*. Algiers: Ministère de la santé.
8. Ministère de la santé et autres. (2015). *Enquête nationale à indicateurs multiples MICS4, Rapport principal*. Algiers: Ministère de la santé.
9. Ministère de la santé et UNICEF. (2020). *Enquête nationale à indicateurs multiples MICS6, Rapport principal*. Algiers: Ministère de la santé.
10. Office National des Statistiques. (2015). *Activité, emploi & chômage, in données statistiques*, No. 729. Algiers: ONS.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Psychological and Sociological Approaches on the Phenomenon of Bullying in Societies

Djeddou Abdelhafid
Professor
University of Abbes Lagrour Khenchela, Clinical Psychology Laboratory University of Setif
Algeria
E-mail: djeddou.hafed@univ-khenchela.dz

Issue web link	https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html
Keywords	bullying, bullying effects, interpretative approaches.

Abstract
Bullying, as a behavioral phenomenon, is as old as humanity itself, yet it continues to evolve in response to shifting cultural and societal norms. Despite its enduring presence across civilizations, academic inquiry into bullying began relatively recently in the 1970s. Today, bullying is recognized as a pervasive and deeply entrenched issue with the capacity to undermine the psychological and social stability of both individuals and communities, transcending barriers of race, religion, language, and social class. Its alarming prevalence in familial, educational, professional, and social settings has drawn the attention of governments, international organizations, media outlets, and scholars alike. This intensified focus reflects growing awareness of its profound psychological, social, and economic consequences—many of which persist well into adulthood. Against this backdrop, researchers have endeavored to analyze the phenomenon through various theoretical lenses, with interpretations shaped by distinct disciplinary, cultural, and epistemological paradigms. This paper examines the psychological and sociological approaches that underpin our understanding of bullying, delving into its conceptualization, manifestations, antecedents, and repercussions.

Citation. Djeddou A. (2025). Psychological and Sociological Approaches on the Phenomenon of Bullying in Societies. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 334–348. https://doi.org/10.56352/sei/8.11.26

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 27.05.2025	Accepted: 17.07.2025	Published: 31.08.2025 (available online)

Introduction

Bullying, a behavior intricately tied to power dynamics and social structures, has been a constant in human societies. It emerges under specific conditions, reflecting an interplay of individual traits, environmental stimuli, and cultural norms. While its existence can be traced to ancient times, the systematic study of bullying remains a relatively modern endeavor. At its core, bullying encompasses acts of intentional aggression—whether

psychological, verbal, or physical—targeting individuals who are unable to adequately defend themselves. These acts are typically characterized by repetition and an inherent imbalance of power [1].

In recent decades, bullying has garnered significant scholarly and public attention due to its detrimental impact on mental health and social cohesion. It is widely understood as a complex phenomenon shaped by the interaction of individual dispositions and environmental influences, including familial dynamics, peer relationships, educational settings, and societal structures. The notion that human behavior is shaped by environmental contingencies is hardly novel. However, the intricate interdependence among these variables—particularly in bullying scenarios—underscores the need for an integrative approach. Such an approach elucidates the roles played by perpetrators, victims, and bystanders within broader social ecosystems [2].

Bullying does not occur in isolation. It reflects and reproduces the values, norms, and power relations embedded within its sociocultural context. Familial patterns, such as exposure to aggressive role models, can perpetuate bullying behavior. Similarly, school climates and peer networks can either reinforce or mitigate its occurrence, depending on the prevailing attitudes and interactions within these environments. At a macro level, cultural ideologies and societal values further shape how bullying is expressed and perceived [3].

1. Theoretical and Conceptual Definitions of Bullying

Bullying, as a term, has been subject to varied interpretations across languages and disciplines. A review of Dessoqi (2016) highlights the multiplicity of translations for the term, each capturing distinct nuances of the phenomenon. Common translations include:

- **Bullying**: Reflecting intentional aggression and dominance.
- **Harassment**: Emphasizing repetitive and unwanted behaviors.
- **Intimidation**: Denoting the use of fear to control or manipulate others.
- **Tyranny**: Highlighting systemic or hierarchical power imbalances.

1.1- Etymology of the Term Bully

The English term *bullying* has its roots in the word *bully*, which originally appeared in the 16th century as a term of endearment, meaning "sweetheart" or "lover," applicable to both genders. This early usage is derived from the Middle Dutch *boel*, meaning “lover” or “brother,” which itself may trace back to *broeder* (brother)[4] .

By the late 17th century, the meaning of *bully* shifted significantly, evolving into a term associated with aggression and dominance. During this period, it came to describe a “blusterer” or “harasser of the weak,” reflecting behaviors of intimidation and coercion. This semantic transition was further influenced by its application to those acting as “protectors of prostitutes,” a usage documented by the early 18th century [5].

The verb form, "to bully," emerged around 1710, meaning “to overbear with bluster or menaces,” solidifying the term’s modern association with aggressive and oppressive behaviors [6]. The transformation of *bully* over centuries underscores shifting societal perceptions of interpersonal power dynamics and behaviors linked to dominance.

1.2- Terminological Definition

In psychological and sociological discourse, *bullying* is conceptually defined as a deliberate and systematic pattern of aggression, characterized by repetition over time and a significant power imbalance between the aggressor and the victim. This behavior often involves physical, verbal, relational, or psychological harm, wherein the perpetrator seeks to assert dominance and control, while the victim typically lacks the resources or ability to retaliate effectively [7].

1.3- Conceptual Definition

Always Bullying, as a phenomenon, is characterized by intentional aggression perpetrated by an individual or group wielding greater power or dominance over a weaker or more vulnerable target. This deliberate

[1] Dessoki, Majdy. The Bullying Behavior Management Scale (Miqyas Al-Ta‘amul Ma‘a -Suluk Al-Tanammur). Amman: Dar Jouna for Publishing and Distribution, 2016. P, 5.
[2] Saleh, Ikram. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur ‘Ind Al-Atfal wa Al-Murahiqin). Cairo: Dar Rawabit for Publishing and Information Technology, 2020. P, 13.
[3] Ibid.P, 14
[4] Etymonline. (n.d.). Bully. Retrieved from https://www.etymonline.com/word/bully
[5] Etymonline. (n.d.). Bully. Retrieved from https://www.etymonline.com/word/bully
[6] Ibid
[7] Olweus, D. (1993). Bullying at School: What We Know and What We Can Do. Blackwell Publishing.

behavior often involves deriving pleasure from witnessing the victim's distress and inflicting physical, emotional, or psychological harm [1].

Melhem (2004) elaborates on this definition, describing bullying as an aggressive act aimed explicitly at causing harm to another, driven by the perpetrator's gratification in observing the victim's suffering.

Bullying manifests in multifaceted ways, encompassing physical, emotional, and verbal aggression, alongside social exclusion and intimidation. It may escalate into acts of extortion, threats of violence, and violations of personal or civil rights. In severe cases, bullying involves organized group aggression, sexual harassment, or even attempts to inflict life-threatening harm. Juvonen, Graham, and Schuster emphasize that bullying behavior arises from an imbalance of power, where the aggressor exerts control over the victim. This imbalance may be expressed through physical harm, verbal humiliation, or indirect forms of aggression such as ostracism, rumor-spreading, and social rejection [2].

Millor (1997) provides further insight, defining bullying as a sustained and targeted form of violence inflicted by an individual or group upon a person incapable of self-defense [3].

- From the various conceptualizations outlined above, bullying can be distilled into several defining features:
- Bullying is not accidental or impulsive; it is a calculated and purposeful act aimed at inflicting harm.
- It represents a specific subset of negative behavior, characterized by hostility and malice, most prevalent during childhood and adolescence.
- A hallmark of bullying is the unequal distribution of power, whether physical, social, or psychological, between the bully and the victim.
- Bullying may manifest verbally, physically, psychologically, or socially, reflecting the diverse strategies employed by aggressors to assert control.
- Victims typically do not provoke the aggression, highlighting the unilateral and unjustified nature of bullying.
- Victims often lack the means to counteract or neutralize the bully's dominance, further reinforcing the power imbalance.
- Bullies frequently derive satisfaction, empowerment, or even enjoyment from their ability to dominate or humiliate others.
- Bullying is marked by its persistence with repeated incidents over time [4].

2. Forms of Bullying

Bullying manifests in various forms, each distinguished by its mode of expression, impact, and visibility. Among these, physical bullying stands out as one of the most overt and easily recognizable types. It involves deliberate acts of aggression, such as hitting, kicking, shoving, tripping, or intentionally damaging the victim's personal belongings. The conspicuous nature of physical bullying often makes it more accessible to detection and intervention. However, its implications extend beyond the physical, leaving deep psychological imprints on the victim's sense of safety and self-worth.

In comparison, verbal bullying operates on a spectrum of direct and indirect behaviors, each with its unique dynamics. Direct verbal bullying involves face-to-face confrontations, where the perpetrator employs insults, mockery, belittlement, or offensive remarks aimed at publicly humiliating or emotionally wounding the victim. Such encounters are often characterized by their immediate and personal nature, amplifying the victim's feelings of distress and vulnerability.

[1] Al-Bilawi, Ihab, and Suleiman, Abdul Rahman. Aggressiveness in Children (Al-'Udwaniyya Ladā Al-Abnā'). Cairo: Zahraa Publishing House, 2010. P, 101.
[2] Al-Subhiyeen, Ali, and Al-Qudah, Mohammed. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Riyadh: Naif Arab University for Security Sciences, 2013.P, 8.
[3] Al-Sufi, Osama, and Al-Maliki, Fatima. "Bullying in Children and Its Relationship with Parental Treatment Styles (Al-Tanammur 'Ind Al-Atfal wa 'Alaqatuhu bi Asalib Al-Mu'amala Al-Walidiya)." Journal of Educational and Psychological Research, No. 35, 2012, pp. 146–183.
[4] Dessoki, Majdy. The Bullying Behavior Management Scale (Miqyas Al-Ta'amul Ma'a -Suluk Al-Tanammur). Amman: Dar Jouna for Publishing and Distribution, 2016. P, 14.

Indirect verbal bullying, by contrast, is more covert and insidious, making it harder to identify and address. It encompasses actions such as spreading malicious rumors, posting disparaging comments about the victim in shared spaces, or socially ostracizing the individual through calculated gestures or expressions. Unlike its direct counterpart, indirect verbal bullying often operates anonymously or through group dynamics, which intensifies the victim's sense of isolation and powerlessness. The concealed nature of these actions not only complicates efforts to hold aggressors accountable but also exacerbates the emotional and psychological toll on the victim [1].

- **Physical Bullying**

Physical bullying entails direct physical aggression, such as hitting, kicking, shoving, tripping, or deliberate destruction of personal belongings. This form is characterized by its overt nature, making it relatively easier to detect compared to other types. While the immediate physical harm may range in severity, its psychological ramifications often extend far beyond the surface injuries, profoundly affecting the victim's sense of safety and agency. Notably, physical bullying is observed less frequently among females, suggesting gendered variations in its manifestation [2].

- **Verbal Bullying**

Verbal bullying is the most pervasive form, transcending age groups and educational settings. It encompasses a spectrum of behaviors, including insults, derogatory remarks, threats, and public humiliation. This form often targets social identities such as gender, race, religion, disability, or socioeconomic status, exploiting these vulnerabilities to demean the victim and undermine their self-worth. Verbal bullying's potency lies in its ability to inflict profound psychological harm while often leaving no visible trace, complicating its detection and mitigation. Additionally, its public nature amplifies the humiliation, creating a ripple effect within peer groups [3].

- **Relational or Social Bullying**

Relational bullying, also referred to as indirect aggression, manipulates social relationships to isolate or ostracize the victim. This form manifests through exclusion from groups, rumor-mongering, and intentional social sabotage. It reflects an assertion of dominance within hierarchical social structures, where the perpetrator wields relational power to marginalize the victim. The long-term effects of relational bullying often include social withdrawal, reduced self-esteem, and difficulty forming healthy relationships. Addressing this form requires early and consistent intervention to disrupt the patterns of social control that sustain it [4].

- **Sexual Bullying**

Sexual bullying involves unwanted sexual advances, inappropriate jokes, rumors, or coercive behaviors that target the victim's sexual identity or autonomy. This form of bullying not only infringes upon personal boundaries but also perpetuates gendered power imbalances and societal stigmas [5].

- **Emotional Bullying**

Emotional bullying, often termed psychological or moral bullying, targets the victim's emotional resilience and sense of self-worth. Behaviors include social exclusion, persistent ridicule, hostile nonverbal cues, and undermining the victim's confidence. This form is particularly insidious, as it frequently goes unnoticed by adults and authority figures. Emotional bullying erodes the victim's psychological well-being over time, leaving scars that are difficult to heal. Its subtlety and long-term impact make it one of the most destructive forms of bullying [6].

- **Racial Bullying**

Racial bullying is motivated by prejudice and discriminatory attitudes, targeting individuals or groups based on race, ethnicity, religion, or cultural background. It manifests through ridicule, stereotyping, exclusion, or even physical aggression. The compounded impact of racial bullying extends beyond personal harm to

[1] Abu Al-Diyar, Masad. The Psychology of Bullying: Between Theory and Practice (Sikulujiyyat Al-Tanamnur Bayn Al-Nazariyya wa Al-Tatbiq). Kuwait: Kuwait National Library, 2013.P, 57.
[2] Abu Al-Diyar, Masad. The Psychology of Bullying: Between Theory and Practice (Sikulujiyyat Al-Tanamnur Bayn Al-Nazariyya wa Al-Tatbiq). Kuwait: Kuwait National Library, 2013.P, 57.
[3] Ibid.P, 58.
[4] Ibid.
[5] Ibid. P, 59
[6] Ibid.

systemic marginalization, as victims often perceive their identity as being under attack. Research underscores the disproportionate vulnerability of racial minorities to this form of bullying, particularly in environments where systemic inequalities persist [1].

– **Cyberbullying**

Cyberbullying leverages digital technologies to inflict harm, exploiting the anonymity and pervasive reach of online platforms. It encompasses behaviors such as spreading defamatory content, issuing threats, and orchestrating targeted harassment campaigns. Particularly prevalent among adolescents, cyberbullying is associated with severe mental health outcomes, including heightened anxiety, depression, self-harm, substance abuse, and even suicidal ideation and suicide [2].

3. Participants in Bullying

Bullying, as a social and psychological phenomenon, unfolds within a multifaceted web of interactions involving distinct roles. They can be categorized as follows:

A. The Bullies

Bullies assert their dominance through deliberate acts of intimidation, threats, and harm, exploiting perceived power imbalances to control their targets. Their behavior, however, is not monolithic and can be categorized into two principal subtypes, each with distinct psychological underpinnings:

1. The Instigator (Provocative Bully)

Instigators are characterized by emotional dysregulation and a deep-seated need to project dominance. Their aggression is often premeditated, driven by internal insecurities that manifest as a compulsive need to subjugate others. Lacking empathy for their victims.

2. The Reactive Bully

Reactive bullies, by contrast, are impulsive and hypersensitive to perceived threats. They interpret benign social cues as provocations, misjudging the intentions of others and responding with disproportionate aggression. In their minds, their behavior is justified as self-defense or preemptive retaliation. This type of bully operates under cognitive distortions, such as the belief that projecting dominance is essential to preserving personal security or respect.

B. The Victims:

Victims of bullying are children whose perceived weaknesses or vulnerabilities render them susceptible to targeted aggression. Their characteristics often align with specific psychological and social markers, which position them as easy targets within hierarchical structures. These include:

- Limited social competence: Difficulty navigating peer dynamics and asserting themselves effectively.
- Physical or emotional vulnerability: Traits such as smaller stature, introversion, heightened anxiety, or impulsivity.
- Social isolation: A lack of popularity or meaningful peer connections, which exacerbates their exposure to bullying.
- Compliance and passivity: A tendency to acquiesce to the bully's demands, whether through material concessions or emotional submission, further reinforcing the power imbalance.

C. The Bystanders:

Bystanders, though ostensibly passive, occupy a critical role in the ecosystem of bullying. Their presence—and their inaction—can tacitly validate the bully's behavior, contributing to the normalization of aggression. The psychological profile of bystanders is marked by a complex interplay of emotions and internal conflicts:

- Guilt and moral conflict: A profound awareness of the injustice unfolding before them, coupled with a sense of failure for not intervening.
- Fear of retaliation: A pervasive anxiety that stepping in could make them the bully's next target.
- Cognitive dissonance: Confusion over moral obligations versus self-preservation, often leading to paralysis.

[1] Abu Al-Diyar, Masad. The Psychology of Bullying: Between Theory and Practice (Sikulujiyyat Al-Tanammur Bayn Al-Nazariyya wa Al-Tatbiq). Kuwait: Kuwait National Library, 2013.P, 60.

[2] Saleh, Ikram. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Cairo: Dar Rawabit for Publishing and Information Technology, 2020.P, 16

- Rationalized inaction: A belief that avoidance is the safest course of action, rooted in a desire for personal security.

4. Factors Contributing to Bullying

Bullying arises from an interplay factors, summarized as follows:

4.1- Psychological Factors

Psychological dimensions play a pivotal role in shaping the dynamics of bullying, as they illuminate the internal drives and vulnerabilities of both perpetrators and victims. Among bullies, certain psychological characteristics fuel aggressive tendencies. These individuals often exhibit a profound need for self-affirmation, which they achieve by asserting dominance over others. Their behaviors are marked by a strong inclination toward control and coercion, a predisposition to view violence favorably, and a striking lack of empathy for their victims. These traits not only sustain bullying behavior but also embolden the bully to continue inflicting harm [(1)].

Equally significant are the psychological traits of the victims, which often render them particularly susceptible to ongoing bullying. Victims tend to exhibit patterns of withdrawal, submission, and conflict avoidance. They may shy away from confrontation, opting instead for behaviors such as crying or passive compliance, which inadvertently reinforce the bully's sense of control and perpetuate the cycle of aggression.

Self-concept and self-esteem are pivotal factors in the bullying dynamic. As Omori and Kirkham (2001) assert, diminished self-esteem can predispose individuals to occupy the roles of either bully or victim, depending on how this internal deficit manifests. Victims, in particular, often exhibit high levels of anxiety, emotional fragility, and an external locus of control. They perceive their circumstances as dictated by forces beyond their control, a cognitive distortion that fosters feelings of helplessness and passivity.

Muawiya Abu Ghazal (2009) highlights that student victims of bullying are often characterized by shy or fragile temperaments, elevated levels of stress, and a pervasive sense of inadequacy. These individuals are typically quiet, emotionally reactive to trivial stimuli, and exhibit an external locus of control, perceiving their lives as governed by external forces beyond their influence [(2)].

Seligman's concept of learned helplessness offers further insight into the psychological state of victims. This phenomenon occurs when individuals, repeatedly subjected to adverse situations they cannot escape or influence, develop a pervasive sense of powerlessness. Victims of bullying often exhibit this learned response, reacting to aggression with tears (particularly among younger children) or withdrawal, behaviors that inadvertently signal vulnerability to aggressors.

Qatami and Al-Sarayra (2009) highlight several defining psychological traits common among victims of bullying. These include:

- Social Reticence: A tendency to withdraw from peer interactions, which isolates them and increases their vulnerability.
- Emotional Sensitivity: Pronounced reactivity to minor provocations, which bullies exploit to escalate aggression.
- Externalized Attribution of Control: A belief that external forces, rather than personal agency, govern their experiences, further entrenching feelings of powerlessness.
- Depressive Symptoms: Persistent feelings of inadequacy, low self-worth, and sadness, which exacerbate their susceptibility to victimization.

These characteristics create a psychological profile that perpetuates a cycle of victimization, as their responses—whether crying, withdrawing, or acquiescing—reinforce the bully's perception of power and control [(3)].

4.2-Personal Factors

[1] Al-Qar'aan, Ahmed Khalil. Early Childhood: Characteristics, Problems, and Solutions (Al-Tufula Al-Mubakkira: Khasaisuha, Mushkilatuha, Hululuha). Amman: Dar Al-Israa for Publishing and Distribution, 2004.

[2] Abu Ghazal, Muawiya. "Bullying and Its Relationship with Feelings of Loneliness and Social Support (Al-Istaqwa' wa 'Alaqatuhu bi Al-Shu'ur bi Al-Wihda wa Al-Da'm Al-Ijtima'i)." Jordanian Journal of Social Sciences, Vol. 5, No. 2, 2009, pp. 89–113.

[3] Qatami, Naifa, and Al-Sarayra, Mona. The Bullying Child (Al-Tifl Al-Mutanammir). Amman: Dar Al-Maisara for Publishing and Distribution, 2009. P, 83.

Bullying behavior is often underpinned by diverse personal motivations, reflecting a spectrum of psychological and emotional dynamics. In some cases, it arises from impulsivity or thoughtlessness, manifesting as reckless actions without deliberate intent. For others, bullying may serve as a response to boredom, driven by a need for stimulation or excitement.

A significant contributing factor lies in the bully's lack of awareness regarding the harm inflicted by their actions. Perpetrators may fail to perceive their behavior as morally or socially unacceptable, rationalizing it as inconsequential or justified. This distorted perception can lead them to believe that their targets deserve such treatment, often reinforcing aggressive tendencies.

Furthermore, bullying may be symptomatic of deeper emotional distress. For some children, it reflects underlying anxiety or dissatisfaction within the family environment, while for others, it serves as a maladaptive coping mechanism to process their own experiences of victimization. Children who have previously endured bullying are more likely to adopt aggressive roles as a means of regaining a sense of power and control.

Victims' emotional and social vulnerabilities also play a critical role in perpetuating the cycle of bullying. Traits such as excessive shyness, poor social skills, and limited peer connections often position individuals as easy targets. A lack of meaningful friendships and emotional resilience can exacerbate their susceptibility, creating conditions that facilitate continued victimization [(1)].

4.3- Familial Factors

The family environment plays an instrumental role in shaping children's behavioral tendencies, particularly with regard to bullying. When aggressive behaviors in children are not met with effective and consistent non-physical disciplinary measures, such behaviors may be inadvertently reinforced. Additionally, children who witness bullying within the family—whether through observing parents or siblings engaging in aggression, or through familial victimization—are more likely to replicate similar patterns in their own interactions.

The use of punitive parenting methods, especially physical punishment, significantly contributes to the development of bullying behavior. Such practices instill a sense of dominance and control in children, leading them to associate aggression with power and self-worth. For these children, bullying becomes a means of asserting their presence and influence, often in response to feelings of insecurity or inadequacy [(2)](Mohamed, 2000, p. 37).

The role of the family in shaping a child's character is unparalleled, as encapsulated in the prophetic saying: *"No child is born except upon the natural disposition; it is his parents who make him a Jew, a Christian, or a Magian."* The parental approach to discipline and the overall familial atmosphere profoundly impacts the likelihood of bullying behaviors. Evidence suggests that both bullies and victims often emerge from family contexts marked by harsh discipline, neglect, or emotional detachment. Bullies frequently report an absence of parental warmth and emotional support, while victims often endure overprotection or excessive parental control, which undermines their autonomy and resilience.

Numerous researchers underscore the significance of parental modeling and supervision in either curbing or exacerbating bullying behavior. Exposure to aggressive role models within the home, coupled with weak parental oversight, dramatically increases the probability of children adopting bullying as a behavioral strategy. Households dominated by physical punishment, authoritarian control, or emotional abuse produce children who internalize aggression as an effective means of establishing dominance and ensuring their survival in social settings.

Hesham El-Khouly (2004) identified parental rejection as one of the most significant predictors of bullying behavior, particularly among high school students. Similarly, harsh disciplinary practices and parental rejection are strong predictors of bullying tendencies in middle school children [(3)].

4.4- Social Factors

[1] Al-Subhiyeen, Ali, and Al-Qudah, Mohammed. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Riyadh: Naif Arab University for Security Sciences, 2013.

[2] Mohamed, Adel Abdullah. Behavioral Disorders in Children and Adolescents (Al-Idtirabat Al-Sulukiyya Ladā Al-Atfal wa Al-Murahiqin). Cairo: Dar Al-Rashad, 2000. P, 37.

[3] Dessoki, Majdy. The Bullying Behavior Management Scale (Miqyas Al-Ta'amul Ma'a -Suluk Al-Tanammur). Amman: Dar Jouna for Publishing and Distribution, 2016. P, 24.

Social factors represent a constellation of external influences that shape individual behavior, encompassing familial relationships, neighborhood dynamics, community interactions, peer group affiliations, media exposure, and the school environment. Within the familial context, parental treatment often oscillates between two extremes: excessive harshness, sometimes escalating to psychological terror, and overindulgence, where boundaries and discipline are virtually nonexistent. Violence within the family tends to perpetuate itself, creating a cyclical pattern that fosters aggression. Additional stressors, such as the absence of a father figure, domestic violence, maternal depression, and the psychological repercussions of parental divorce, can cultivate an environment ripe for the development of aggressive and bullying behaviors in children.

The interplay between home and school environments further compounds this issue. A culture of violence within the broader community frequently seeps into the school setting, normalizing aggressive behaviors among students. This phenomenon underscores the significant influence of three external components on students' socialization: family, community, and media [(1)].

Economic and social conditions exacerbate this dynamic. Factors such as low family income, parental illiteracy, psychological deprivation, and chronic frustration can render students vulnerable to maladaptive coping mechanisms, including bullying. These conditions often alienate students, fostering a sense of disconnection from their external environment and driving them toward aggressive behaviors as an outlet for their frustration and discontent.

Media serves as a powerful conduit for social influence, often reinforcing or perpetuating aggressive behaviors. Krousi (2005) highlights how media platforms, when exploited for commercial or personal gain without regard for their societal impact, contribute significantly to the normalization of violence and bullying. Television programs, films, and other media content—whether directed at children or adolescents—wield a profound influence over young viewers' social behaviors. By stimulating the imagination, such content often encourages identification with characters, particularly those involved in action, adventure, or violence. In some instances, this identification evolves into mimicry, as youth emulate the behaviors of these characters, reinforcing the cycle of aggression and dominance [(2)].

4.5- School Factors

The school environment plays a critical role in shaping student behavior and can either mitigate or exacerbate bullying tendencies. Key influences include the school's overall culture, its physical environment, peer relationships, the role of teachers, and the absence of specialized committees to address behavioral issues. When teachers resort to violence against students—irrespective of the form it takes—the effects extend far beyond temporary compliance. Such compliance is often superficial, masking deep-seated resentment that can spread among classmates and, over time, across the broader student body. This shared hostility may escalate into overt acts of bullying, particularly when unchecked.

Additional factors that contribute to bullying within the school context include inappropriate or provocative behavior by certain teachers, low academic performance among students, and the negative influence of peer groups. Psychological instability, weak connections between the school and students' families, unfavorable socioeconomic conditions, and the teacher's lack of authority or inadequate subject knowledge further compound the issue. Together, these elements create an environment ripe for the emergence and persistence of bullying behaviors [(3)].

4.6- Personal Factors of the Bully

A variety of personal and contextual factors can predispose children to adopt bullying behaviors. These include:

- Inadequate self-confidence and poor interpersonal skills hinder healthy social interactions.
- Emotional distress often manifests in aggressive behavior as a coping mechanism.
- Children who experience mistreatment at home may channel their anger into bullying weaker peers.

[1] Abu Ghazal, Muawiya. "Bullying and Its Relationship with Feelings of Loneliness and Social Support (Al-Istaqwa' wa 'Alaqatuhu bi Al-Shu'ur bi Al-Wihda wa Al-Da'm Al-Ijtima'i)." Jordanian Journal of Social Sciences, Vol. 5, No. 2, 2009, pp. 89–113.

[2] Al-Subhiyeen, Ali, and Al-Qudah, Mohammed. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Riyadh: Naif Arab University for Security Sciences, 2013. P, 45.

[3] Ziad, Ahmed Rashid. Clinical Psychology ('Ilm Al-Nafs Al-'Iyadi). Amman: Al-Warraq for Publishing and Distribution, 2014. P, 123.

- A lack of guidance within the home environment deprives children of examples of appropriate behavior.
- Beliefs that harshness and rigidity are essential for achieving social status among peers.
- Deep-seated mistrust of others, coupled with a desire for retribution and self-aggrandizement.
- Emotional dysregulation often leads bullies to externalize their frustrations, blaming others for their mistakes.
- Observing peers engage in bullying without consequences reinforces aggressive actions as socially acceptable.
- Exposure to television programs that glorify negative role models can inspire children to emulate such characters.
- The absence of clear rules or supervision allows bullying behaviors to flourish. [1]

5. Bullying Through the Lens of Psychological and Sociological Theories: Interpretive Insights

The phenomenon of bullying has long captured the attention of psychologists and sociologists, who have sought to unpack its complexities through diverse theoretical lenses. Despite the shared objective of understanding aggression, interpretations of bullying vary widely, reflecting the distinct epistemological foundations of different schools of thought.

5.1- Psychoanalytic Theory

Psychoanalytic theory, as articulated by Sigmund Freud, offers a profound framework for understanding aggression and bullying. Freud's conceptualization of human psychology revolves around two primary instincts: the life instincts (Eros), which drive love, creativity, and construction, and the death instincts (Thanatos), which underpin destruction, aggression, and violent impulses. Bullying, from this perspective, emerges as an external expression of the death instinct, manifesting in an individual's destructive urges directed either inward toward the self or outward toward others.

Freud posited that children are born with inherent aggressive drives that are instinctual in nature. Aggression and bullying, therefore, are interpreted as natural extensions of these primal urges. Additionally, Freud linked such behaviors to stages of psychosexual development, suggesting that aggression is especially pronounced during the oral, anal, and phallic stages. It is within the phallic stage, dominated by the Oedipal complex, that bullying tendencies often become most evident. Psychoanalysts widely agree that unresolved conflicts during this stage significantly contribute to the emergence and consolidation of aggressive and bullying behaviors in children.

Freud emphasized the critical role of the superego (*über-ich*)—the component of the psyche responsible for regulating morality and ethical behavior. Children raised in environments lacking consistent moral guidance are prone to developing weak or dysfunctional superegos. This deficiency often results in an impaired sense of guilt and moral accountability, leading them to perceive deviant or aggressive actions, including bullying, as socially acceptable or even admirable. For such individuals, bullying becomes a means of asserting power, which they might equate with heroism.

Freud further explored how repressed emotions and unmet instinctual needs contribute to the formation of aggressive tendencies. When societal or familial structures suppress a child's innate drives, the resulting frustration is often displaced, manifesting as aggression. While some bullying behaviors are spontaneous expressions of the *id*, others arise as reactions to unmet needs, such as deprivation or rejection. Emotional bonds within the individual's environment, however, can act as buffers, redirecting aggressive impulses outward rather than inward.

Psychoanalytic theory also highlights symbolic displacement, wherein aggressive energy is projected onto a surrogate target. Freud likened this process to primitive rituals, such as piercing a wax effigy to symbolically harm an adversary. Similarly, individuals channel their aggression toward substitute victims, externalizing their inner turmoil in ways that may feel cathartic yet perpetuate harm [2].

5.2- Physiological Theory

[1] Dessoki, Majdy. The Bullying Behavior Management Scale (Miqyas Al-Ta'amul Ma'a -Suluk Al-Tanammur). Amman: Dar Jouna for Publishing and Distribution, 2016. P, 26.

[2] Saleh, Ikram. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Cairo: Dar Rawabit for Publishing and Information Technology, 2020.pp. 39-40.

Advocates of the physiological perspective contend that bullying behavior is markedly more prevalent among individuals with neurological impairments, particularly those involving brain damage. Such impairments are believed to disrupt the neurological systems responsible for regulating aggression and impulse control.

Additionally, some researchers within this framework attribute bullying to hormonal influences, particularly elevated levels of testosterone. Empirical studies suggest a positive correlation between increased testosterone concentrations in the bloodstream and heightened tendencies toward aggressive behaviors [1].

5.3- Biological Theory

The biological perspective frames bullying as a behavior rooted in intrinsic physiological and neurological factors. Central to this theory is the role of the brain's frontal lobe, which governs emotional regulation and aggression. Research indicates that severing specific neural pathways in this region can diminish feelings of anger, tension, and predispositions toward violence, further highlighting its significance in controlling aggressive tendencies in children.

Beyond neural structures, biological theorists point to physical conditions such as fatigue, hunger, or the presence of physical pain as triggers for aggressive or bullying behaviors. These factors exacerbate emotional dysregulation, making individuals more prone to lash out.

Moreover, some researchers argue that aggression, including bullying and violent tendencies, is inherently instinctual. From this viewpoint, such behaviors are integral to an evolutionary survival mechanism, embedded within the biological makeup of humans. Aggression is perceived as a means to fulfill innate drives, particularly those related to possession, dominance, and the assertion of control [2].

5.4- Behavioral Theory

Behavioral theory posits that human behavior, including bullying, is shaped not by internal emotions or subjective experiences but by observable external actions governed by the principles of stimuli and responses. Within this framework, aggression is viewed as a learned behavior, acquired and reinforced through environmental interactions. Behavioral theorists emphasize that the entirety of human conduct, including aggressive tendencies, is shaped by external influences. Aggression becomes embedded in an individual's behavioral repertoire when reinforced by circumstances that reward such actions, particularly in contexts of frustration or unmet expectations [3].

In the specific context of bullying, the behavior tends to recur when positively reinforced. For example, if a child uses physical aggression, such as hitting, and successfully achieves their desired outcome—whether attention, compliance, or material gain—they are likely to replicate the behavior. In contrast, behaviors that do not receive reinforcement gradually fade, aligning with Thorndike's *Law of Effect*. This principle asserts that actions yielding satisfying or rewarding outcomes are more likely to be repeated, while those that do not are extinguished.

The reinforcement process plays a pivotal role in perpetuating bullying behavior. A bully often derives reinforcement from several sources, including peers who condone or encourage their actions and the reactions of their victims. For instance, in primary school settings, when a victim responds to bullying with visible signs of distress, such as crying, the bully experiences positive reinforcement, solidifying their perception of aggression as an effective strategy for achieving dominance or fulfilling their goals.

In rare instances, when a victim retaliates or defends themselves, the bully might experience negative reinforcement, which can discourage further aggressive actions. However, this scenario is uncommon. More frequently, the bully is emboldened by the implicit or explicit approval of peers, who often bolster the bully's self-perception of superiority. This external validation not only reinforces the aggressive behavior but also motivates the bully to construct additional scenarios where they can exert dominance over others. The

[1] Al-Subhiyeen, Ali, and Al-Qudah, Mohammed. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Riyadh: Naif Arab University for Security Sciences, 2013. P, 50.

[2] Saleh, Ikram. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Cairo: Dar Rawabit for Publishing and Information Technology, 2020.p, 40.

[3] Radwan, Samer. Mental Health (Al-Sihha Al-Nafsiyya). Amman: Dar Al-Maisara for Publishing, Distribution, and Printing, 2007.P, 277.

reinforcement of their actions, whether through social validation or the successful attainment of their goals, sustains the cycle of bullying and further ingrains the behavior into their social interactions [1].

5. Frustration-Aggression Theory

The frustration-aggression theory conceptualizes frustration as the psychological state experienced when an individual perceives an obstacle that prevents them from fulfilling their needs or achieving their goals, or when they anticipate the presence of such an obstacle in the future [2](Abu Saad, 2015, p. 253).

Prominent theorists such as Neal Miller, Robert Sears, John Dollard, and Clark L. Hull have extensively explored this paradigm, focusing on the social dimensions of human behavior. At its core, the theory posits that frustration acts as a stimulus that inherently provokes aggression as a natural response. The intensity and persistence of this aggression are directly proportional to the degree and recurrence of the frustration experienced. When individuals are obstructed from attaining vital goals, they are likely to experience heightened frustration. This frustration can manifest in direct aggression against the source of the impediment if the individual feels confident enough to confront it, or in indirect aggression if fear of retaliation inhibits direct confrontation.

The theory further argues that frustration generates an aggressive drive, which seeks resolution through actions aimed at causing harm. This drive diminishes progressively after the aggressive act is carried out, a process referred to as *catharsis* or emotional release. Frustration elicits feelings of anger and injustice, creating a psychological predisposition toward aggressive behavior.

This dynamic is particularly evident in early childhood interactions, where most conflicts among preschool-aged children arise from competition over possessions or toys. When their biological or emotional desires are unmet, children often experience frustration, which frequently translates into aggressive responses. These behaviors highlight the role of frustration in precipitating acts of aggression as a means of resolving the tension caused by unfulfilled needs [3].

5.6- Humanistic Theory

The humanistic theory emphasizes guiding individuals toward self-actualization, focusing on the fulfillment of their potential and personal growth. Within this framework, the emergence of bullying behaviors is linked to unmet fundamental needs during childhood or adolescence, including biological necessities such as food, water, and basic security. The deprivation of these essential needs often results in feelings of insecurity, leading to weakened connections with peer groups and a diminished sense of belonging. This lack of social integration can significantly lower self-esteem, which, in turn, may manifest in maladaptive behaviors such as aggression and bullying as a means of compensating for unmet emotional and psychological needs [4].

5.7- Social Cognitive Theory (Social Learning)

Social cognitive theory, often referred to as social learning theory, posits that bullying behaviors are acquired through observational learning. Children model aggressive behaviors displayed by significant figures in their lives, such as parents, teachers, peers, or even characters in media like television programs. The likelihood of engaging in such behaviors increases when opportunities to replicate them arise.

The theory further argues that the consequences of observed behaviors play a critical role in determining whether aggression will be repeated. If a child receives punishment for imitating aggressive acts, they are less likely to replicate such actions. Conversely, if the behavior is rewarded—either materially, socially, or through achieved dominance—the child is more inclined to repeat it.

This theoretical approach highlights the importance of prior experiences and the motivational impact of learned outcomes. Research robustly supports the role of imitation and modeling in the acquisition of

[1] Dessoki, Majdy. The Bullying Behavior Management Scale (Miqyas Al-Ta'amul Ma'a -Suluk Al-Tanammur). Amman: Dar Jouna for Publishing and Distribution, 2016. P, 32.
[2] Abu Saad, Ahmed. Mental Health: A New Perspective (Al-Sihha Al-Nafsiyya: Manzur Jadid). Amman: Dar Al-Maisara for Publishing and Distribution, 2015.
[3] Dessoki, Majdy. The Bullying Behavior Management Scale (Miqyas Al-Ta'amul Ma'a -Suluk Al-Tanammur). Amman: Dar Jouna for Publishing and Distribution, 2016. P, 34.
[4] Saleh, Ikram. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Cairo: Dar Rawabit for Publishing and Information Technology, 2020.p, 44.

aggressive behaviors, demonstrating that children may exhibit bullying tendencies even in the absence of frustration or direct provocation [1](Al-Subhiyeen & Al-Qudah, 2013, p. 51).

5.8- Cognitive Theory

Cognitive theory emphasizes the distinct differences in thought processes and cognitive patterns between bullies and their victims. Bullies tend to perceive themselves as having control over their environments and often frame their behaviors in a self-centered manner. They frequently justify their aggressive actions by claiming that their victims "deserve" the treatment, effectively normalizing their bullying behavior.

Dodge and Coie (1987) suggest that cognitive distortions are central to the mindset of bullies. These distortions often lead bullies to misinterpret others' intentions, erroneously perceiving them as hostile. Such flawed perceptions result in a heightened propensity for aggression. Additionally, bullies often display immature cognitive development, favoring one-dimensional thinking and maintaining overly positive attitudes toward violence.

Bullying behaviors are also tied to deficiencies in cognitive functioning. These include:

- Impairments in information processing.
- Difficulty maintaining attention and focus.
- Poor academic performance and achievement.
- Lack of sustained task engagement.
- Inefficient utilization of learning capacities.
- Deficiencies in memory retrieval and feedback mechanisms.
- Challenges in mental organization and strategic planning.
- Absence of foundational study and learning skills [2].

5.9- Rational Emotive Theory

Rational emotive theory emphasizes addressing the irrational beliefs and misconceptions held by students that underpin their bullying behavior. It posits that such behaviors stem from deeply ingrained yet flawed convictions, which must be identified, challenged, and replaced with logical, rational alternatives. Counselors employing this approach guide students to recognize that their harmful actions toward others are driven by erroneous thought patterns. Furthermore, they aim to help students internalize the understanding that exerting control and dominance over others does not equate to genuine strength or power; rather, it fosters resentment and alienation among peers.

As part of the counseling process, a significant focus is placed on transforming negative self-talk—internal monologues and beliefs that reinforce aggressive behavior. For instance, thoughts like, *"I must be the strongest and dominate others," "If I don't hit others, they will hit me,"* or *"Hurt the weak so the strong will fear you,"* are systematically replaced with constructive alternatives, such as: *"I will gain respect and recognition by helping others and refraining from harm, making me a valued and admired individual."*

Students are encouraged to engage in reflective exercises that involve articulating their internal thoughts when confronted with situations that trigger the desire to bully. By voicing these thoughts, they become more aware of their underlying motivations and their responsibility for their actions. For example, a student might express, *"This student is smaller than I am, and I am stronger."* Counselors then work to dismantle such reasoning, emphasizing that logical and ethical frameworks do not condone stronger individuals overpowering weaker ones. They also highlight that strength is finite and relative, underscoring the futility of aggressive dominance as a sustainable approach to interpersonal interactions.

Counselors further challenge students to consider the irrationality of their beliefs, focusing on key principles such as:

- **Happiness**: A person's happiness is directly linked to their thoughts and actions. Rational, positive thinking fosters emotional well-being and a sense of security, while irrational thought patterns often result in psychological distress and dissatisfaction.

[1] Al-Subhiyeen, Ali, and Al-Qudah, Mohammed. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Riyadh: Naif Arab University for Security Sciences, 2013. P, 51.

[2] Abu Al-Diyar, Masad. The Psychology of Bullying: Between Theory and Practice (Sikulujiyyat Al-Tanammur Bayn Al-Nazariyya wa Al-Tatbiq). Kuwait: Kuwait National Library, 2013. P,81.

- **Unhappiness and social rejection**: Negative thinking and internalized self-talk lead to poor behavior toward others, which in turn causes feelings of unhappiness and social isolation.

Corey (1996) asserts that rational emotive theory equips individuals with the skills and tools necessary to identify irrational thoughts and replace them with constructive, rational ones. This cognitive restructuring allows individuals to modify their emotional responses to challenging situations, fostering healthier interpersonal dynamics. [1].

6. **Psychological and Social Impacts**

The ramifications of bullying are profoundly serious, with the potential to escalate to life-threatening consequences. Qmoore, from the Anti-Bullying Center at Trinity College Dublin, highlights an expanding body of research demonstrating that psychologically healthy individuals—whether children or adults—who experience bullying are significantly more susceptible to developing stress-induced disorders. In severe cases, this vulnerability can culminate in suicidal ideation or attempts. Victims of bullying often bear emotional and psychological scars that endure throughout their lives, and in extreme instances, they may contemplate ending their lives as a form of rejecting societal norms, condemning perceived injustices, or expressing despair regarding their future. This form of psychological distress can result from social oppression, acute alienation, and the absence of adequate emotional support. Some individuals may even view suicide as a means of retaliating against both themselves and their environment. Alarming statistics reveal that in the United Kingdom alone, between 15 and 25 children die by suicide each year due to bullying.

In school environments, victims of bullying often endure chronic anxiety, sadness, and an overarching fear of their aggressors. Their thoughts are frequently consumed by anticipation of future encounters with bullies. Such students may also report physical symptoms resulting from direct assaults, such as hitting or kicking. Fear of repeated victimization drives many to avoid participating in school activities or frequenting spaces like playgrounds and restrooms, where they feel most vulnerable. This avoidance deprives them of valuable social and educational opportunities, leading to long-term developmental deficits. Even when present in the classroom, their ability to concentrate on academic tasks is compromised, with severe consequences for their overall educational outcomes. Over time, some victims may develop risk-taking tendencies or exhibit violent behaviors as maladaptive coping mechanisms.

Prolonged exposure to bullying exacerbates symptoms of anxiety and depression, significantly impairing victims' social relationships. Consequently, bullied individuals often withdraw from social interactions, exhibit uncooperative behavior, and struggle to form or maintain friendships. Their isolation is compounded by the avoidance of peers, who may stigmatize them, further amplifying their emotional pain, social rejection, and diminished self-worth. These factors contribute to a sense of exclusion and lower their perceived social standing, which may further impede their psychological and emotional recovery.

Academically, bullying has a pronounced negative impact on victims' performance. Frequent mockery and rejection—stemming from their inability to defend themselves against aggressors—often result in feelings of humiliation and resignation. Victims expend considerable mental energy worrying about how to avoid future incidents, leaving little capacity for academic focus or engagement. Their preoccupation with self-protection frequently leads to disengagement from educational activities, particularly among those already struggling academically [2].

Conclusion:

Bullying has emerged as a critical behavioral phenomenon, drawing increasing attention from scholars and practitioners over the past two decades. This intensified focus reflects the pervasive nature of bullying across various domains of life, underscoring its profound implications for both individuals and broader social structures. As a multifaceted issue, bullying manifests in diverse forms and degrees, shaped by historical, cultural, and societal contexts. Alarmingly, its impact has escalated in recent years, posing significant challenges to numerous communities worldwide.

[1] Saleh, Ikram. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Cairo: Dar Rawabit for Publishing and Information Technology, 2020.pp, 41-42.

[2] Saleh, Ikram. Bullying Behavior in Children and Adolescents (Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin). Cairo: Dar Rawabit for Publishing and Information Technology, 2020.pp, 20-21.

What amplifies the severity of this issue is its disproportionate prevalence among children and adolescents—demographics widely regarded as the bedrock of any society's progress and development. The rise in violent behaviors within these groups threatens not only their personal well-being but also the broader social fabric. This alarming trend has necessitated rigorous academic inquiry across various disciplines, despite the relatively recent emergence of systematic research on bullying.

Scholars from diverse fields, including psychology, sociology, and medicine, have undertaken the critical task of deciphering the underlying causes and mechanisms of bullying. While theoretical frameworks and cultural perspectives vary, these disciplines converge in their commitment to unraveling the phenomenon's psychological, social, and economic dimensions. Through comprehensive analysis, researchers have developed robust scientific approaches to elucidate the dynamics of bullying, evaluate its long-term repercussions, and propose evidence-based interventions.

The collective efforts of these academic endeavors have yielded valuable strategies for mitigating the prevalence and severity of bullying. By addressing its root causes, fostering preventive measures, and promoting practical solutions, societies can safeguard vulnerable populations while nurturing environments conducive to healthy interpersonal and social development. Such insights serve as a foundation for building resilient communities and ensuring sustainable progress in the face of this persistent challenge.

List of references:

Books

1. Abu Saad, A. (2015). *Mental health: A new perspective* [Al-Sihha Al-Nafsiyya: Manzur Jadid]. Amman: Dar Al-Maisara for Publishing and Distribution.

2. Abu Al-Diyar, M. (2013). *The psychology of bullying: Between theory and practice* [Sikulujiyyat Al-Tanammur Bayn Al-Nazariyya wa Al-Tatbiq]. Kuwait: Kuwait National Library.

3. Dessoki, M. (2016). *The bullying behavior management scale* [Miqyas Al-Ta'amul Ma'a Al-Suluk Al-Tanammur]. Amman: Dar Jouna for Publishing and Distribution.

4. Al-Subhiyeen, A., & Al-Qudah, M. (2013). *Bullying behavior in children and adolescents* [Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin]. Riyadh: Naif Arab University for Security Sciences.

5. Al-Bilawi, I., & Suleiman, A. R. (2010). *Aggressiveness in children* [Al-'Udwaniyya Ladā Al-Abnā']. Cairo: Zahraa Publishing House.

6. Al-Qar'aan, A. K. (2004). *Early childhood: Characteristics, problems, and solutions* [Al-Tufula Al-Mubakkira: Khasaisuha, Mushkilatuha, Hululuha]. Amman: Dar Al-Israa for Publishing and Distribution.

7. Melhem, M. (2004). *Developmental psychology: The human life cycle* ['Ilm Nafs Al-Namu: Dawrat Hayat Al-Insan]. Amman: Dar Al-Fikr for Publishing and Distribution.

8. Mohamed, A. A. (2000). *Behavioral disorders in children and adolescents* [Al-Idtirabat Al-Sulukiyya Ladā Al-Atfal wa Al-Murahiqin]. Cairo: Dar Al-Rashad.

9. Qatami, N., & Al-Sarayra, M. (2009). *The bullying child* [Al-Tifl Al-Mutanammir]. Amman: Dar Al-Maisara for Publishing and Distribution.

10. Saleh, I. (2020). *Bullying behavior in children and adolescents* [Suluk Al-Tanammur 'Ind Al-Atfal wa Al-Murahiqin]. Cairo: Dar Rawabit for Publishing and Information Technology.

11. Radwan, S. (2007). *Mental health* [Al-Sihha Al-Nafsiyya]. Amman: Dar Al-Maisara for Publishing, Distribution, and Printing.

12. Ziad, A. R. (2014). *Clinical psychology* [‘Ilm Al-Nafs Al-‘Iyadi]. Amman: Al-Warraq for Publishing and Distribution.

Journals

1. Abu Ghazal, M. (2009). Bullying and its relationship with feelings of loneliness and social support [Al-Istaqwa’ wa ‘Alaqatuhu bi Al-Shu‘ur bi Al-Wihda wa Al-Da‘m Al-Ijtima‘i]. *Jordanian Journal of Social Sciences, 5*(2), 89–113.

2. Asadov, A. A.(2025). Comparative literary pedagogy: analyzing the presence of world literature in Azerbaijani school textbooks. *Science, Education and Innovations in the Context of Modern Problems*, *8*(3), 512-527.

3. Al-Sufi, O., & Al-Maliki, F. (2012). Bullying in children and its relationship with parental treatment styles [Al-Tanammur ‘Ind Al-Atfal wa ‘Alaqatuhu bi Asalib Al-Mu‘amala Al-Walidiya]. *Journal of Educational and Psychological Research, 35*, 146–183.

Dictionaries

1. Etymonline. (n.d.). Bully. In *Online Etymology Dictionary*. Retrieved from https://www.etymonline.com/word/bully

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The material capabilities and their role in building trends towards the practice of recreational sports physical activity in the south of Algeria

Ben Saifia Lahcen
Laboratory of Modern Sciences of Physical and Sports Activities, University of Boumerdes
Algeria
E-mail: l.bensaifia@univ-boumerdes.dz
https://orcid.org/0009-0000-9475-971X

Ben Chaa Saad
University of Boumerdes
Laboratory of Modern Sciences of Physical and Sports Activities, University of Boumerdes
Algeria
E-mail: s.benchaa@univ-boumerdes.dz
https://orcid.org/0009-0007-6340-1521

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Material Capability, recreational sports, physical activity, South of Algeria

Abstract
This study aims to know the role that the available financial capabilities play in influencing the attitudes of individuals towards the exercise of sporting recreational physical activities, as the study sample included 370 individuals engaged in sports physical recreational activities in the state of Ghardaia were chosen in an intentional way, where they were distributed a questionnaire dedicated to measuring The degree of this effect is in trends, and the data were analyzed by iterations, percentages, weighted mean and standard deviation.

One of the most prominent results is that the available financial capabilities contributed to the desire of individuals to engage in recreational sports activities, through the availability of stadiums, halls and places for sports practice, in addition to the financial capabilities of individuals enabled them to purchase some sports equipment used in practice.

Citation. Lahcen B.S., Saad B.Ch. (2025). The material capabilities and their role in building trends towards the practice of recreational sports physical activity in the south of Algeria. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 349–358. https://doi.org/10.56352/sei/8.11.27

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 11.03.2025	Accepted: 04.07.2025	Published: 31.08.2025 (available online)

Introduction and study's statement of the problem:

Free time is increasing and multiplying in our world today, as a result of change in the living conditions and the control of machines and their compensation of human effort. With this increase, individuals find themselves in a very difficult struggle to fill their free time with what is beneficial and far from the consequences of its misuse, so many resort to practicing sports activities as a solution to this problem of emptiness. However, no two people disagree on what the conditions of this practice dictate regarding the importance of having a space that contains these individuals and provides them with the material capabilities that meet the purpose and achieve what is required behind this practice. Therefore, sports capabilities were an important requirement for practicing sports and a basic essence for it. Evidence of this is what most countries in the world seek by establishing multi-specialty sports facilities. This matter was not in vain, but rather came as a result of the existence of a scientific basis that pushes and directs those in charge of the work a driving force to advance the facility and sports capabilities in order to best achieve the purposes for which it was established. (Darwish, 1998).

Today, practicing sports is one of the important things that benefits the individual and society, so countries are keen to support and form positive attitudes among their citizens towards practicing sports activities, and allocate large budgets to promote sports with its various goals, including recreation.

Given the novelty of the topic and its previous consideration as an act of sports management, it did not receive sufficient attention related to research and study. It has become clear to us that there are few studies related to this topic, which, even if they are sometimes hinted at, are nothing more than an implicit framework under another title or are a branch of a specific study, which is what we found in the study "Aflin Nassif Makari" entitled "Study."An analysis of the youth care programs at Minya University in 1988, which aimed at determining the clarity of the objectives of the university's youth care programs, the suitability of the activity programs to the needs of university students, and the suitability of the financial capabilities of the existing activities. The method used in this study was the descriptive method using the survey method. The study sample amounted to 36 individuals from the activity committee pioneers, 645 male and female students practicing various sports activities, and 44 specialists implementing the activities The most important results of this study were the following:

-Current programs do not achieve the goals set for them.

- Focus on organizing competitions in the programs offered without paying attention to the activities of the broad student base. Youth care workers are not specialized in some of the activities they supervise.

-There is a shortage of material capabilities, facilities and tools. There are no multiple ways to implement activity programs and they are only announced to a small extent.

We also found another study by "Samir bin Muhammad Khalil Sayed" entitled "Study of the Impact of Sports Potential and Activities on the Attitudes of Taibah University Students", which aimed at studying the impact of sports potential and activities on the attitudes of Taibah University students. The study sample included (295) students, who were selected using the random, stratified method conducted on all colleges of Taibah University. A questionnaire was distributed to the sample dedicated to this matter, and the researcher relied in conducting his study on the descriptive survey approach. One of the most important findings of this study was that the university's sports facilities are neglected, there is no supervisor for every sports activity at the university, students want to practice sports activities with their friends due to the lack of places to practice sports activities, there is no health-related physical fitness due to the lack of practice of sports activities at the university, and schedules for organizing sports activities hinder students' participation in them.

Accordingly, these studies are close to or similar to our research in that they search for financial capabilities and their connection to practicing sports and the latter's influence on this practice. However, they differ from our research in the influence of these capabilities on the demand or trend towards practice, especially in leisure periods, and this is what we seek to find in the results of this research.

The availability of capabilities is one of the basic elements affecting the degree of demand for practicing sports because the presence of facilities, halls, playgrounds and sports equipment is indispensable. Recreational sports cannot fully achieve their goals without the availability of the necessary financial capabilities which reduces the

feeling of boredom among practitioners and the difficulty in achieving the goal of recreation. Hence, this research problem revolved around investigating the extent to which the available material capabilities affect individuals' attitudes towards practicing recreational sports and physical activity. Accordingly, we assumed the following:

Individuals' attitudes towards recreational physical activity are influenced by available financial capabilities.

Objectives of the study:

This study aims primarily to highlight the effectiveness and degree of influence of available financial capabilities on individuals' attitudes towards practicing sports activities in their free time by knowing the extent of their availability or the reality of their existence as a means used to practice recreation through physical sports activity, and then the extent of their influence on the desire or reluctance to practice sports in individuals' free time.

Importance of the study:

Practicing sports is of great importance to developed nations and societies. Given that sports activity, whatever its goal, is an open world for all segments of society, from children, youth, adults and the elderly, whether male or female. It works to build society by taking care of the the individual's health and his entity, providing him with motor skills and physical fitness and accustoming him to the correct methods of dealing and refining behavior. (Malki Muhammad, Al-Hadi Issa, 2019, p. 344)

Practicing sports activities in leisure time is a civilized and educational aspect that benefits the individual and society with advancement and progress. Therefore, the Recreation and Leisure Charter affirmed the right of every person to participate in all forms of recreation and to integrate into them during leisure time. Therefore, countries have sought to find all ways to penetrate recreation into society by providing spaces and places for practice. In doing so, it hopes to spread the practice of recreational sports and find positive solutions to the problem of leisure time by finding the largest number of individuals practicing these activities, seeking to support their positive attitudes towards this practice. Accordingly, this study came to give a picture of what the availability of financial capabilities contribute to promoting and supporting attitudes towards practicing recreational sports activities. Studies have confirmed that the lack of financial capabilities hinders positive investment in free time and does not contribute to achieving happiness and quality of life in light of the ambition to create a civilized and modern society. Therefore, those concerned must overcome all difficulties and obstacles as much as possible in order to ensure positive participation in sports recreation activities, the most important of which is providing financial capabilities. (Bin Zaidan Muhammad, 2015, p. 93)

Keywords in the study:

Capabilities:

Terminological definition: It is everything that can contribute to achieving a specific current or future goal, including facilities, stadiums, devices, tools, budget, geographical conditions, information, and specialized cadres, following the scientific method of planning, management, evaluation, and achieving those goals. (Al-Shabkshi, 1990).

Procedural definition : It is a set of means, tools, conditions, people, and everything that facilitates and enables the practice of sports activities in society.

Direction:

Terminological definition: It is a state of mental and nervous excellence that is regulated by experience and imposes a dynamic effect, directing the individual's responses to various situations and stimuli. In his opinion, mental nervous preparation may be temporary and result from the momentary interaction between the individual

and the elements of the environment in which he lives, while long-term preparation is characterized by stability and constancy (Alawi Muhammad Hassan, 1992, p. 219).

Saad Abdel Rahman defined it as a willingness on the part of the individual to respond to a topic in a certain way (Abdel Rahman Saeed, 1971, p. 518).

Procedural definition: In our study, trend means the sum of an individual's tendencies and aptitudes that make him choose sports activity as a better alternative to many activities that fill his free time.

Recreational sports physical activity:

Terminological definition: Recreational sports physical activity is a type of activity that is practiced in free time and which the individual chooses out of personal motivation to practice, and which results in him acquiring many physical, moral, social and cognitive values (Al-Darwish Kamal and Al-Hamami Muhammad, 1985, p. 54).

Procedural definition: It is an activity that an individual or group can do in their free time, chosen according to their inclinations and desires, in order to achieve balance, or relax, bring joy, vent the human soul, renew its energy and activity. It is used to eliminate psychological disorders and social pressures (Bakhoush Hamida and Bouras Muhammad, 2020, p. 455).

Practical part:

1- Methodological methods used:

The approach followed: We followed the descriptive analytical approach due to its suitability to the nature of the study, which considers every investigation to focus on studying the phenomenon...As it exists in present, with the aim of diagnosing it, revealing its aspects, and determining the relationships between its elements...(Bin Mursali Ahmed, 2005, p. 287).

Spatial frame of the study: This study was conducted in the municipalities of the state of Ghardaia.

Temporal frame of the study

This study ran from October 10, 2018 until May 20, 2019.

Population and sample of the study:

Study population: The study population represents a group of individuals practicing recreational physical activities located in the state of Ghardaia.

Sample: The sample represents a part of the study population from which field data are collected and is considered part of the whole, meaning that a group of population members is taken to be representative of the research population (Zarwati Rashid, 2007, p. 334).

The study sample consisted of 370 individuals from a group of people practicing various recreational physical activities in the state of Ghardaia in southern Algeria, where they were selected intentionally.

Tool of the study: In this research, we used the questionnaire form technique as a data collection tool, which is sometimes called the survey form or case study. The questionnaire is defined as a set of questions composed in a systematic manner on a specific topic, then placed in a form sent to the concerned persons in order to obtain the answers contained therein (Alawi Muhammad Hassan and Ratib Osama Kamel, 1999, p. 146).

In this research, we used the questionnaire form technique, which we perceive as the most appropriate tool for our study after reviewing some of the tools used in previous studies, to be presented to the judges in order to get their final form.

Psychometric properties of the instrument:

- Questionnaire validity test: In the validity test, we adopted the following:

First: apparent honesty : To test the validity of the tool, we relied on apparent validity, as we presented the study tool (form) in its initial form to a group of expert doctors and specialists with knowledge, experience and expertise. The form phrases consisted of 25 phrases in their initial form. The judges were asked to express an opinion on the clarity of these phrases and their suitability for measuring what they were designed for and the adequacy of the phrases and their coverage of the various basic aspects of the study. In light of the guidelines provided by the judges, amendments were made, agreed upon by more than three-quarters of the judges, to the study tool, whether by amending the wording or deleting some phrases after identifying the topics of confusion and deficiency, and adding new phrases, as the form reached its final form, the topic under investigation.

Second: The validity of the internal consistency of the form

The validity of the internal consistency was verified after confirming the apparent validity of the form by applying it to a survey sample consisting of (50) individuals. The Pearson correlation coefficient was calculated between the scores of each axis of the form and the total score of the form. The correlation coefficient between each paragraph and its total score was also calculated using the statistical package (0SPSS.2).

We found that the values of the correlation coefficients for all paragraphs ranged between (0.558 and 0.747), as the correlation coefficient was average to strong between each paragraph of the field and its total score, which was estimated at: (0.889), in addition to the fact that all paragraphs proved their significance at the significance level (0.05). The following table shows the validity of the content of the axis statements and the total axis as a whole:

Phrase number	Phrases	Correlation coefficient	Significance
01	My financial capabilities allow me to purchase some tools and clothing to use for recreational sports activities	0,560**	Sign
02	Sports equipment and devices intended for recreational sports are suitable for use	0,634**	Sign
03	I use a balanced diet that enables me to exercise normally	0,558**	Sign
04	The availability of sufficient playgrounds, halls and sports practice areas has helped in the desire to practice sports in free time	0,673**	Sign
05	There are specialized sports facilities that encourage the practice of the preferred type of sport in leisure time	0,646**	Sign
06	The availability of adequate health facilities makes me feel safe exercising in my free time	0,641**	Sign
07	The amounts of subscriptions and membership in neighborhood teams and clubs are within the reach of the majority of people	0,655**	Sign

08	Health requirements for sports facilities are available	0,747**	Sign
09	The capabilities available to serve sports have contributed to individuals' interest and guidance towards practicing sports	0,658**	Sign
10	Sportswear and sports equipment are sufficiently available in stores and sales centers.	0,613**	Sign
11	Means of transportation and ease of movement to stadiums and sports halls motivate me to practice	0,581**	Sign

** Statistically significant at the significance level ($0.01 \geq \alpha$)

* Statistically significant at the significance level ($0.05 \geq \alpha$)

(Source: Based on the outputs of the 20.00 SPSS system)

- Stability of the questionnaire: We followed two methods in calculating stability

1- Questionnaire stability using Cronbach's alpha coefficient Alhpa

The stability coefficient of the study tool was calculated using Cronbach's alpha coefficient, Alhpa, on a sample consisting of (50) individuals and the ratio of the alpha coefficient was equal to.8520. This value is considered high, which indicates that stability is high, and thus the statements are valid for application.

2- Retest method: On a group of 50 individuals with a time interval of 15 days between the first and second application. When calculating the correlation coefficient, its value was r = 0.87, which is a statistically significant value at the significance level of 0.05.

Study procedures: We applied the study to a group of individuals through the following steps:

- Go directly to physical practice areas in neighborhoods and sports vehicles to meet the target group in the study.

- Distributing the questionnaire after that, as the number of questionnaires distributed was 370, of which we were able to retrieve 307 of them with complete data.

Organizing and transcribing questionnaires using a computer to subject them to statistical processing.

- Tools and statistical means: In processing the data of the questionnaires taken for the study, we used the Social Sciences Statistical Package Program "SPSS" 20.00, through which we used:

Standard deviation is considered a measure of dispersion, and it is the square root of the average squares of deviations from the mean.

Weighted average: The weighted mean is mostly used in five-step gradation measures for answers, and it was calculated according to the three-step gradation measure by giving a coefficient of 03 for a completely agree answer, 02 for somewhat agree, and 01 for a disagree answer, then collecting the results and dividing them by the number of sample members n.

-Repeats and percentages to describe the characteristics of the study sample and determine the responses of the study sample members, where:

$$m(\%) = K \times 100 / N$$

Where: K is the number of repetitions and N is the total

Pearson correlation coefficient to determine the validity coefficient of the study tool

Alpha coefficient to calculate the stability of the study tool.

2- Presenting, interpreting and discussing the results: The following table shows the descriptive data of the study sample on the contribution of financial capabilities to individuals' interest and orientation towards exercising in their free time.

Phrase Number	I completely agree		I agree some extent		I disagree		Weighted average	Standard deviation	Order
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage			
1	214	%57,8	122	%33,0	34	%9,2	2,48	0,659	3
2	193	%52,2	139	%37,6	38	%10,3	2,41	0,670	7
3	227	%61,4	112	%30,3	31	%8,4	2,52	0,646	2
4	223	%60,3	101	%27,3	46	%12,4	2,47	0,706	4
5	204	%55,1	109	%29,5	57	%15,4	2,39	0,740	8
6	217	%58,6	112	%30,3	41	%11,1	2,47	0,687	5
7	175	%47,3	135	%36,5	60	%16,2	2,31	0,734	10
8	154	%41,6	140	%37,8	76	%20,5	2,21	0,760	11
9	192	%51,9	133	%35,9	45	%12,2	2,39	0,695	9
10	204	%55,1	127	%34,3	39	%10,5	2,44	0,677	6
11	228	%61,6	110	%29,7	32	%8,6	2,52	0,650	1
Total average axis	2.42								

(Source: Based on SPSS 20.00 output)

Analysis and discussion:

The table above presents the descriptive data which are used to show the extent of contribution of material capabilities in directing individuals towards practicing recreational physical sports activities in the state of Ghardaia, where the arithmetic averages ranged between (2.52, 2.21), while the frequency and percentages of the study

sample ranged between the highest frequency of (228) at a rate of (61.6%) and the lowest frequency equal to (31) at a rate of (8.4%). The highest order of phrases was in phrase N (11) in the first order of phrases, the lowest order was in phrase N (8) as the last order, and the general arithmetic average of the axis was (2.42).

After reviewing the metadata through the table (arithmetic mean, ratios and frequencies), the results of the statements indicated the following:

1- The phrase that ranked first states: "Transportation and ease of movement to stadiums and sports halls motivate me to practice." Through this phrase, it became clear that the majority of individuals do not find a problem in moving towards their sports recreation places, and on this basis they accept to practice sports without difficulty.

2- The phrase that came in second place states: "I use a balanced diet that enables me to exercise normally." In its meaning, it is a translation of the financial situation of individuals, as most of them are helped by their financial capabilities to improve their dietary pattern in a way that makes it balanced and helps them exercise normally.

3- The phrase that ranked third states: "My financial capabilities allow me to buy some tools and clothes for recreational sports activities." The response of the majority of individuals indicated that their financial capabilities allow them to buy the tools and clothes they need, and therefore this encourages them to move towards exercising in their free time.

4- The phrase that ranked fourth stated: "The availability of stadiums, sports halls, and sports practice places is sufficient to help me turn to exercising in my free time", an answer indicating the importance and role of financial capabilities in directing individuals towards exercising.

The phrase that ranked fifth stated the following: "The availability of health facilities is sufficient to make me feel safe from exercising in my free time." A large percentage of individuals expressed their feeling of safety as a result of the availability of health facilities, especially neighboring ones, which would make individuals accept to exercise in their free time and they are reassured that these health facilities are by their side.

6- The phrase that ranked sixth reads as follows: "Sportswear and sports equipment are sufficiently available in stores and sales centers," in response to the majority of individuals that the presence of sportswear and sports equipment is sufficient in stores and sales centers, which encourages the desire to practice sports in general.

7- The phrase that ranked seventh stated the following: "Sports tools and equipment designated for practicing sports recreation are suitable for use." The study sample answered by a majority that sports tools and equipment are somewhat suitable for many considerations, the most important of which is the modernity of the halls and places designated for practicing sports, and this is an important matter and contributes to the interest and trend of individuals towards practicing sports in their free time.

8- The phrase that ranked eighth states: "There are specialized sports facilities that encourage in practising sports in leisure time." A large group of individuals responded somewhat in agreement with this, considering that there are specialized sports facilities that encourage the practice of sports in leisure time, and this is what makes them accept it, each according to his type of favorite sport However, the problem remains that these facilities are insufficient for all practicing individuals, forcing them to wait for their roles in benefiting from the latter, which sometimes makes the matter a cause of disagreement, boredom, or reluctance.

9- The phrase that ranked ninth is: "The financial capabilities harnessed to serve sports contributed to individuals' interest and directing them towards practicing it." Here, the majority of individuals expressed that these financial capabilities played a prominent role in individuals' interest in practicing sports, even if they were small at times or not available in all types of sports However, the undeniable reality is that the role of these available capabilities has contributed to individuals' interest in and orientation towards exercising in their free time.

10- The phrase that ranked tenth states: "The amounts of subscriptions and participation in neighborhood teams and clubs are within the reach of the majority of people." The individuals' responses indicated that the financial

subscriptions to neighborhood teams and clubs that provide a recreational sports space in general are within the reach of the majority of participating individuals, and thus justify the importance of the individual's special capabilities in attending and participating in his favorite recreational sports activities.

11- The phrase that ranked eleventh states the following: "Health conditions in sports facilities are available." This phrase is the one that ranked last in the axis phrases, and in its meaning it shows the difference in points of view between individuals on this issue between complete acceptance, acceptance to some extent, and rejection, and the significance and justifications for each of them Perhaps the matter is due to the difference in the places of activities for individuals and the condition of each place. As previously mentioned, the state's efforts in building sports halls and neighborhood stadiums, and the importance of that and even the fact that they are new at first, the issue that should be mentioned, which concerns the health conditions of these facilities, is that the floors of these stadiums are either cement, which makes falling into them a danger to the health of the individual Or earthen, where there is an increase in dust and dirt, which poses risks to the respiratory system, to the individual's health in particular, and to the surrounding environment in general.

Conclusion and suggestions: We conclude from the answers and opinions of the study members about the extent to which financial capabilities contribute to individuals' desire and orientation towards practicing sports in their free time that there is a focus on the answers and their lack of dispersion through the previous statistical indications, which express in their entirety the importance of the latter in pushing and directing members of society towards exploiting their free time in practicing sports in a way that benefits the individual and society. We also conclude from the above analysis that the available capabilities have contributed greatly to individuals' desire to practice sports in their free time, especially in terms of ease of movement to stadiums and sports halls and the presence of these places to a degree through which individuals can participate in their favorite activities. The availability of capabilities is one of the basic elements affecting the success of the recreational event, as the presence of halls, stadiums and sports equipment is indispensable Recreation cannot take place in the absence of these capabilities, because they are one of the most influential factors, especially in developing various cultural aspects of sports, which increases the feeling of belonging to the homeland. The presence of capabilities, especially devices and tools, reduces the feeling of boredom among practitioners, and limits unwanted behavioral manifestations that conflict with moral values, customs and social traditions in the homeland.

Therefore, we believe that it is necessary to increase attention to sports facilities and installations and provide the necessary sanitary means, especially in terms of stadium floors, which are mostly made of cement or dirt. The amounts of club subscriptions must also be reconsidered, especially clubs such as swimming and combat sports, which cost sums to join that burden the participants and thus keep them away from practicing their favorite activities in their free time. Thus, we arrive at the conclusion that whenever material capabilities are available, the trend moves in its direct direction towards positivity and the trend is opposite if they are not available. These results are consistent with the of study (Makari 1988) and the study of (Khalil Sayed, 2009).

Conflict of Interest

The authors declare that there is no conflict of interest regarding the research, authorship, or publication of this article.

References (APA 7th Edition)

Books

1. Abdul Rahman, S. (1971). *Human behavior in analyzing and measuring variables*. Cairo Library.
2. Alawi, M. H. (1992). *Sports psychology*. [Publisher not specified].

3. Alawi, M. H., & Rateb, O. K. (1999). *Scientific research in physical education and sports psychology*. Dar Al Fikr Al Arabi.
4. Al-Darwish, K., & Al-Hamami, M. (1985). *Recreation and leisure in contemporary society*. Umm Al-Qura University.
5. Al-Shabkshi, A. M. M. (1990). *Sports and recreational potential*. [Publisher not specified], Cairo.
6. Ben Morsli, A. (2005). *Scientific research methods in media and communication sciences*. Dr. M.C.
7. Darwish, A. A. M. (1998). *Potential in physical education*. Knowledge Facility.
8. Zerouati, R. (2007). *Methods and tools of scientific research in the social sciences*. Ain Mlila.

Articles

9. Bakhoush, H., & Bouras, M. (2020). The effectiveness of recreational sports activities in reducing depression in people with myopathy. *Sports Creativity Magazine, 11*(1), 449–469.
10. Ben Zidan, M. (2015). Obstacles to practicing sports recreation in free time among people with motor disabilities. *Sports Creativity Magazine, 6*(1), 83–95.
11. Maliki, M., & Al-Hadi, I. (2019). Social changes and their impact on sports practice in the school environment. *Sports Creativity Journal, 10*(2), 342–364.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Erosion of the Family's Role and Its Repercussions for Youth Deviance: An Analytical Sociological Perspective

Hayet Senouci
Yahia Fares University, Médéa
Algeria
E-mail: senoucihayet1980@gmail.com

Adel Belkacem
Yahia Fares University, Médéa
Algeria
E-mail: belkacemadel1818@gmail.com
ORCID: https://orcid.org/0009-0009-0877-184X

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Erosion of family, deviant behaviour, youth deviance, sociologiocal condition.

Abstract

The family constitutes the fundamental institution of primary socialization, shaping individual values, behavioral orientations, and cultural frameworks that guide subsequent integration into society. However, rapid economic, social, and cultural transformations have progressively eroded the family's educational and normative functions. This erosion has generated visible repercussions in the form of youth deviance, manifested in diminished self-discipline, normative disintegration, and the proliferation of deviant behaviors. The issue is particularly acute in the Arab world, and in Algeria specifically, where structural challenges—including family disintegration, economic hardship, technological intrusion, and weakened parental authority—exacerbate vulnerability among young people. This article provides an analytical sociological perspective on the nexus between the weakening of the family and the rise of youth deviance. Through a theoretical and contextual exploration, it highlights the interactive variables driving this phenomenon and proposes pragmatic measures to mitigate its societal impact. The family has historically functioned as the cornerstone of social cohesion and stability. It is the first institution where individuals acquire values, norms, and roles essential for societal integration. Yet, globalization, technological change, and socioeconomic pressures have undermined this pivotal role. In many societies, particularly within the Arab region, the weakening of family structures has coincided with a marked rise in deviant behaviors among youth. Algeria offers a critical case study in which traditional family bonds are increasingly challenged by economic instability, rapid cultural shifts, and new modes of socialization outside parental control.

Citation. Senouci H., Belkacem A. (2025). The Erosion of the Family's Role and Its Repercussions for Youth Deviance: An Analytical Sociological Perspective. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 359–369. https://doi.org/10.56352/sei/8.11.28

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.01.2025 | Accepted: 01.06.2025 | Published: 01.09.2025 (available online)

Introdcution and Theoretical Framework

The analysis of family erosion and youth deviance can be grounded in classical and contemporary sociological theories.

- **Durkheim's theory of anomie** underscores the weakening of social norms when traditional institutions, such as the family, lose their regulatory capacity.
- **Social control theory** (Hirschi, 1969) highlights the importance of strong familial bonds in preventing deviance.
- **Cultural transmission theories** emphasize how the family serves as the primary agent of normative reproduction, whose weakening disrupts intergenerational continuity.

By applying these frameworks, one can conceptualize the family's retreat as a central factor in shaping youth attitudes toward conformity and deviance.

3. The Algerian Context

In Algeria, several interrelated factors exacerbate family erosion and its repercussions for youth:

1. **Economic pressures** – Rising unemployment, inflation, and precarious living conditions strain household stability, diminishing the family's ability to provide consistent supervision.
2. **Technological influences** – The pervasive impact of social media and digital technologies exposes youth to alternative value systems, often conflicting with traditional norms.
3. **Parental disintegration** – Divorce rates and the absence of effective parental exemplarity weaken the family's authority and normative influence.
4. **Cultural transitions** – The tension between traditional values and modern aspirations has contributed to normative fragmentation and identity crises among Algerian youth.

These dynamics collectively create fertile ground for the emergence and normalization of deviant practices, ranging from delinquency to substance abuse.

Discussion

The erosion of the family's role has both immediate and long-term consequences. In the short term, reduced supervision and weakened parental authority correlate strongly with juvenile delinquency and antisocial behavior. In the long term, the fragmentation of familial norms undermines social cohesion, perpetuating cycles of marginalization and deviance.

Policy interventions must therefore adopt a multidimensional approach, reinforcing both familial structures and complementary institutions (schools, community organizations, and media platforms). Programs supporting parental guidance, economic empowerment, and digital literacy are crucial to counterbalance the pressures facing families and reduce youth susceptibility to deviant trajectories.

The family constitutes the first social institution within which the individual is nurtured, inaugurating the earliest phases of socialization that lay the rudimentary foundations for personality formation, value acquisition, identity consolidation, and the construction of cultural as well as social belonging. Within the family, the child acquires initial communicative competences, masters elementary principles of social interaction, and becomes acquainted with the predominant value-normative complex. Sociological paradigms—from functionalism to symbolic interactionism—concur in foregrounding the family's centrality in role allocation and behavioral regulation, positioning it as the primary mediating structure between individual and society.

Over the past few decades, family life in Algeria has been buffeted by a chain of structural shifts. To begin with, escalating living costs and the rising necessity for dual earners have, quite literally, pulled parents out of the home for longer stretches. Hence, both the *symbolic* and the *practical* dimensions of parental oversight have thinned. At the same time, cultural currents—most notably a sharper taste for individual autonomy and the slow crumbling of extended-kin routines—have nibbled away at the household's moral authority. Moreover, the spread of digital

media has injected an army of new socializing agents into children's daily orbit; these platforms jostle with the family, and sometimes out-shout it, in shaping youthful outlooks.

Consequently, a moral and behavioral vacuum has opened up and it seldom stays empty. Unmonitored outside cues rush in, steer adolescent preferences, and, little by little, redraw their sense of self. Therefore, one now sees a mix of rule-breaking habits and a brittle, showy self-reliance—both signs that informal social control has loosened and that communal attachment is fraying. Crucially, the danger does not stop at the private doorstep; rather, it spills outward, nibbling at the shared moral order and, ultimately, at social cohesion itself.

Analytical attention must therefore pivot from diagnosis to remediation. The central imperative is to recalibrate and fortify the family's adaptive capacity within rapidly evolving structural conditions. This objective presupposes (a) the design of flexible educational models attuned to contemporary household configurations; (b) the activation of synergistic partnerships linking family, school, religious institutions, and civil associations; and (c) the deployment of targeted support and awareness programs sensitive to Algeria's dynamic socio-economic landscape.

Methodologically, the present study adopts a descriptive–analytical design. Such an approach enables the systematic delineation of conceptual parameters, the identification of causal mechanisms, and the assessment of empirical effects within the Algerian context. It maps the educational functions historically assigned to the family, specifies the empirical indicators signaling their erosion, and interrogates the statistical and experiential correlation between that erosion and emergent patterns of youth deviance. Evidence is drawn from a triangulated corpus comprising theoretical scholarship and selective field data anchored in local social reality.

First – Operational Definitions of Key Concepts

1. Family

The family is the primary social unit within which the individual is reared, typically comprising father, mother, and offspring. It constitutes the foundational agency of socialization, inculcating values, shaping personality, and directing conduct from early childhood onward.

In this article the term denotes "the educational and socio-emotional milieu that cares for the individual during formative stages, exercising a pivotal role in normative regulation and value socialization."

2. Erosion of the Familial Role

Familial erosion refers to the attenuation—or outright absence—of the family's educational and socio-regulatory functions, triggered by factors such as loosened kinship ties, parental preoccupation, economic stressors, or exogenous technological influences. Here it is understood as "a structural or functional dysfunction afflicting the family and diminishing its leverage over value inculcation and behavioral regulation of offspring."

3. Deviance

Deviance denotes any behavior that contravenes prevailing social norms, legal statutes, or customary expectations. It may manifest behaviorally (e.g., aggression), normatively (e.g., rejection of moral strictures), or criminally (e.g., theft, substance abuse). The concept is employed to mean "the cluster of negative practices into which youth drift in the wake of deficient familial guidance, such as violence, truancy, drug consumption, or affiliation with deviant peer groups."

4. Youth

It designates the age-cohort roughly spanning 15 to 30 years—a life-phase marked by psychosocial transitions and an intensified quest for identity, rendering individuals acutely sensitive to environmental stimuli, whether salutary or deleterious.

The present study concentrates on this cohort given that it bears the brunt of familial attenuation and shows heightened susceptibility to deviance when oversight and mentoring lapse.

Second – Causes of Erosion of the Family's Role and Its Repercussions for Youth

1. Socio-Cultural Transformations

- **Family disintegration:** In contemporary societies, the disintegration of the family constitutes a principal gateway to understanding one of the most visible social dysfunctions, namely youth deviance. Because the family—regarded as the first social institution—undertakes the task of primary socialization, it transmits to the child the corpus of values, norms, and behavioral restraints that facilitate social adaptation. Once the family fractures, owing to divorce, chronic conflict, or the physical or emotional absence of a parent, it loses efficacy in that critical function, thereby creating a fertile milieu for deviant conduct.

Multiple empirical studies confirm a causal relationship between fragile family bonds and elevated rates of behavioral deviance among adolescents, especially within complex urban settings. One study observes that an individual deprived of emotional gratification at home, or raised amid acute family strife, often compensates by affiliating with peer clusters that—where supervision is lacking—may draw the adolescent into substance use, violence, or moral transgression (Al-Aissaoui, 2004).

A report issued by the Arab Centre for Criminological and Social Research (2019) notes that more than 60 % of cases recorded in juvenile-rehabilitation facilities derive from disrupted or unstable family backgrounds, reinforcing the premise that an inactive family is a primary driver propelling youth towards deviance (Arab Centre for Criminological and Social Research, 2019).

The absence of modelling figures within the household, coupled with weakened guidance, lax social control, and dwindling emotional fulfilment, renders the young person more prone to adopt deviant behavioral patterns—whether to assert self-worth, to fill an affective void, or under the sway of ill-disciplined peers or negative media content. Consequently, family disintegration is not an isolated issue but an explanatory key to a broad spectrum of youth-deviance phenomena. Addressing it demands a multilayered intervention—psychological, educational, and social—aimed at re-empowering the family, supporting disrupted households, and forging partnerships among educational and social institutions.

The Algerian reality diverges little from the general Arab context. In fact, certain indicators reveal a marked rise in the phenomenon owing to profound socio-economic transformations experienced over recent decades. Official statistics record more than 60 000 divorces annually in recent years, signaling widespread family dissolution and leaving growing numbers of children and adolescents in unstable domestic environments (National Office of Statistics, 2022).

These findings align with Belkacem's 2018 study on the impact of paternal absence in Algerian families, which observes that the lack—or weakening—of paternal authority deprives adolescents of a reference model, impelling them to seek alternative identities that may be constructed through behaviors contravening social norms, especially in the absence of preventive programs or supportive institutions for vulnerable families (Belkacem, 2018).

The situation further deteriorates in impoverished, marginalized urban quarters where unemployment, poverty, exclusion, and the paucity of alternative pedagogical frameworks accumulate, exposing the young person to urban violence or street- and gang-related subcultures.

Linking family disintegration to youth deviance in Algeria is no longer merely theoretical; field data and scholarly evidence substantiate the connection. The state and civil society therefore need to activate preventive and remedial mechanisms: reinforce psycho-social support schemes for fractured households, reinvigorate alternative socializing agencies—mosque, school, youth associations—and shield the rising generation from sliding into destructive behavioral trajectories.

- **Erosion of Familial Values**

Family values set the compass: they steer children's conduct, shape their personalities, and steady their intellectual and behavioral bearings. Over the past twenty years, however, that compass has begun to wobble. Economic strain now presses heavily on many Algerian households; everyday schedules shift almost weekly, and the parental division of labor bears little resemblance to earlier decades. Consequently, the home's capacity to guide, advise, and correct has thinned. In particular, long hours spent by mothers in paid work—together with fathers either overwhelmed by breadwinning duties or sidelined by unemployment—interrupt ordinary parent-child contact. A clear pedagogical vacuum follows. Core norms such as respect for authority, self-discipline, group loyalty, and religious identity no longer move with the same ease from one generation to the next. The problem is not simply a lack of warmth or physical presence; rather, the family's moral code—once passed on almost implicitly—now stalls in transit. As a result, when oversight slackens, adolescents look outward: television, the street, and an ever-expanding digital world supply replacement value systems that compete with, and sometimes overwrite, the lessons once learned at home. More often than not, these imported scripts clash with local culture and with the community's ethical and religious foundations.

Additional indicators reinforce the thesis of attenuated family values. Across the Arab region in general, and in Algeria in particular, recent decades have witnessed an unprecedented influx of foreign cultures, propelled by the media-communication revolution and the explosion of Internet and social-network use among youth cohorts. This profound openness has reconfigured the sources from which the rising generation acquires values and knowledge; no longer does the family monopolize socialization. Young people now confront rival value references that may contradict familial and societal norms.

Within this climate, the family has ceded its primacy as an educational agent to digital media, which disseminate behavioral templates, linguistic codes, and cultural symbols frequently antithetical to local cultural-religious identity. Bouzidi (2019) observes that "the Algerian child now consumes foreign media content from the earliest years, thereby internalizing a value system distinct from the system the family attempts to instill" (Bouzidi, 2019).

Ben Zidane (2022) adds that more than sixty-five % of Algerian adolescents spend daily in excess of four hours before screens—mobile phones, computers, televisions—without effective parental monitoring, exposing them to cultures of violence, individualism, rebellion, or emulation of models alien to their milieu (Ben Zidane, 2020). Such exposure directly fractures value identity and fosters deviance, particularly in youth.

The displacement of traditional value sources yields a personality marked by value dualism, torn between the demands of local cultural belonging and the allure of Western exemplars. Absent adequate familial and school guidance, many young people drift into axiological disjunction that may escalate into deviant behaviors: rejection of authority, rebellion, violence, substance use, or attraction to virtual communities that cultivate anti-social proclivities.

The technological surge—and, with it, the rise of new media, especially the Internet and social-network platforms—has thrown Algerian youth wide open to foreign cultures. More often than not, these cultures celebrate values at odds, even in direct conflict, with local social and religious norms. Consequently, the reference points that once guided young people have been rearranged: the family and the school no longer hold a near-monopoly on guidance; instead, border-blurring digital content now fills that role.

In practice, the resulting value slippage shows up across Algerian society in several ways:

1. Rising rates of juvenile and youth delinquency, most visibly in the large urban centers such as Algiers, Oran, Annaba.

2. Widespread, uncritical imitation of Western styles—clothing, music, defiant stances toward authority, patterns of intimate relations—particularly among marginalized groups.

3. Heightened tension within the household, fuelled by an ever-widening generation gap and, crucially, the near-absence of genuine dialogue channels.

4. Affiliation with deviant or extremist electronic groups that offer a trans-local, substitute identity.

Hence, outside cultural currents cannot be disentangled from the rise of youth deviance in Algeria; they act as one of its deep-running motors, steadily eroding parental authority and dulling the household's ability to steer or restrain behavior. At the same time, the classic roles of father and mother as everyday mentors are thinning under cumulative strain. Like many Arab households, the Algerian family has been reorganized from within, most visibly in the arena of day-to-day child-rearing. Not long ago, the home functioned as a compact unit—paternal authority was clear, duties were split, and order, along with guidance, followed almost automatically. Today, economic stress, a mother's longer hours in paid work, and stubborn unemployment among fathers have chipped away at that arrangement; close monitoring of children has become the exception rather than the rule.

Significantly, the diminished educational role of parents does not represent a chance anomaly confined to a few households. Rather, it signifies a systemic response to sustained structural pressures that now shape Algerian social life. In view of these conditions, strengthening intra-familial educational capacities ought to feature prominently in any holistic prevention framework. When the home no longer supplies a reliable normative horizon, adolescents tend to anchor themselves to external value systems which so often legitimize rebellion or pave the way to outright deviance.

2. Economic Conditions:

* ***Poverty and Unemployment: Social Marginalization and the Erosion of Family Authority in Algeria.***

Economic crises stand out as a primary force pulling apart the Algerian family's functional fabric where poverty and joblessness have settled in as long-term realities, most sharply felt in marginalized city districts and in out-of-the-way rural zones. Consequently, parents—fathers above all—spend much of their energy wrestling with material pressures. Emotional availability wanes; pedagogical oversight thins; outside influences, some of them risky, slip into the empty space.

Bouchama 'Abd al-Kader (2019) drives the point home: "Prolonged economic stress and unemployment sap a father's sense of control and influence. He turns inward—or simply checks out—thereby weakening his role as the household's behavioral gatekeeper" (Bouchama, 2019). In turn, this pedagogical vacuum breeds feelings of deprivation and exclusion among children, nudging them toward alternative—sometimes deviant—routes to social recognition.

In the same vein, Ben Ghazal (2021) shows that financial instability cultivates a *laissez-faire* socialization style: norms loosen, monitoring vanishes, and the street or digital media becomes the chief socializing agent, thereby amplifying the probability of deviance, violence, or affiliation with rebellious subcultures (Ben Ghazal, 2021).

Peripheral neighborhoods in Algeria's major cities exhibit high concentrations of unemployment among both youth and fathers, producing socially fragile families. Economically deprived young people display a heightened propensity to challenge authority, repudiate traditional values, or engage in violent behavior, substance use, and petty theft as strategies of survival and recognition. Unemployed fathers, meanwhile, endure chronic stress and a sense of lost control, conditions that poison the household climate and precipitate the psychological and symbolic fragmentation of the family as a nurturing institution.

Parental Work Preoccupation: Temporal Pressures Undermining Familial Equilibrium in Algeria

With the economic and social reconfigurations that have unfolded since the 1990s, Algerian households have experienced an unprecedented expansion in off-site labor hours, especially following the broad entry of women into the paid workforce. This shift has re-scripted intra-familial relations: both parents now confront occupational demands that absorb time and energy otherwise invested in child-rearing, behavioral monitoring, and the psychosocial tracking of their offspring.

Laouadj Samira's 2021 study reports that "the average daily span parents spend with their children in Algeria's major cities does not exceed two hours," a window rarely devoted to substantive guidance or dialogic interaction, but rather to perfunctory everyday logistics (Laouadj, 2021). Such attenuated affective and pedagogical engagement weakens children's anchorage to familial reference points and leaves them open to extra-familial vectors of influence—the street, mass media, or digital networks.

Long work shifts create an educational vacuum within the household, a void that is spontaneously populated by external actors who may be unreliable or even perilous. The risk intensifies in the absence of intermediary institutions—youth clubs, mosques, schools—capable of supplying value containment. Under these conditions, adolescents face elevated odds of adopting deviant trajectories: verbal or physical aggression, tobacco use, or compulsive internet consumption (Najafov, 2021).

Specificities of the Algerian context

- Escalating living costs compel many families to depend on dual earnings, thereby magnifying parental absenteeism.
- In large urban centers, extended commuting between residence and workplace further widens the temporal gulf separating parents from children.
- An underdeveloped lattice of alternative pedagogical infrastructures (co-curricular activities, care facilities) exacerbates the situation, producing unsupervised youth who construct their value systems in unregulated milieus and thus become more susceptible to deviant conduct in the absence of sustained guidance.

Modern Technology: Social Media and the Erosion of Familial Bonds – A Sociological Approach on the Algerian Setting

During the past two decades, Algeria has witnessed a sweeping expansion of social-media use that has recalibrated intra-household relations. The smartphone or personal computer now mediates children's primary interactions with their surroundings, while the family's traditional role as the chief locus of normative oversight has contracted. As digital immersion grows, symbolic and psychological distance widens inside the family, most sharply between parents and their children. Spending more than four hours a day online has become common among adolescents; the habit dampens both the quantity and the quality of face-to-face exchange, thereby weakening the circulation of long-standing values. Moreover, many platforms parade behavioural, linguistic, and cultural models that sit uneasily with local norms. Youth, in turn, become more receptive to adopting alternative identities that diverge from the community's own heritage (Najafov, 2024).

Patchy digital guidance at home is breeding a cohort of youngsters who feel emotionally adrift and morally fragile; a clever meme, a charismatic streamer, or an online clique can steer them with little resistance—sometimes just for laughs, sometimes with an overt ideological agenda.

- Social-media saturation. Algerian teens now spend long stretches on platforms that glorify verbal aggression, mock parental authority, and celebrate open defiance.
- Risk-laden "challenges." Closed groups invite them into dangerous dares—cyber-bullying, smear campaigns, or overtly unethical stunts—turning transgression into a badge of daring.
- A dialogue deficit at home. With kitchen-table conversation in short supply, these platforms step in as an all-day, unsupervised classroom. Identity shifts from family circle to digital tribe; unfiltered access to hate content, "digital highs," or illicit liaisons normalizes deviance and masks subtler harms such as online cruelty until they are firmly rooted.

Attenuated Educational Guidance: Absence of Family–School Synergy and the Resultant Distortions in Algerian Youth Socialization:

Many urban Algerian households lean almost entirely on the school to supply moral direction. Yet classrooms cannot replace parental care, daily behavioural monitoring, or the steady psychological backing that a home should provide. Separated like this, the two spheres fail to reinforce one another, and young people end up with a fractured value framework—especially given that the current education system offers few effective safety nets of its own.

Lack of coordination yields not only cognitive lacunae but also identity perturbations, weakened belonging, and an attenuated sense of social responsibility in pupils, rendering them more vulnerable to peer-group influence and deviant conduct. A field study in Tipaza Province conducted by Khalfaoui Fouad (2019) found that more than 64 % of deviant youth had no regular dialogue with their parents regarding their scholastic life; some had never discussed academic or behavioral problems with either parent (Khalfaoui, 2019). Algerian schools typically exhibit a fragile liaison between teaching staff and guardians, which leaves adolescent supervision partial at best. Certain families confer unqualified authority upon the school to discipline and guide their offspring, intervening neither in truancy nor in troubling behaviors. This tendency is acute in working-class or marginalized districts where families, burdened economically or culturally, lack either the capacity or the awareness necessary for sustained educational follow-up. The resulting impression of neglect fosters indifference among adolescents, who then seek alternative loci of affiliation; the absence of family–school coordination consequently undermines the efficacy of any pedagogical intervention and accelerates pathways into deviance (Najafov, 2025).

5 –Absence of Parental Role Models and Its Impact on Youth Deviance in Algeria

Parental example stands at the center of socialization. From father and mother, children draw their first rough map of moral conduct and acceptable behavior. During recent decades, however, Algeria has undergone social and economic shifts that have unsettled this arrangement. Many youngsters now grow up in homes where both parents are perpetually occupied, locked in chronic conflict, or physically absent through divorce, migration, or death. In such settings, the child loses daily contact with a stable and positive model.

This void operates as a powerful but indirect driver of deviance. Faced with ordinary challenges, the adolescent finds no reliable pattern to imitate; decision-making wavers, norms blur, and the pull of peer groups grows stronger. In that uncertain space, street cohorts and online influencers step forward, offering themselves as substitute guides.

Third – Remedies for Youth Deviance Triggered by Familial Erosion in Algeria

1. Reinforcing the Family's Socializing Function

The most immediate route to curbing behavioral deviance is, quite simply, to restore the household to its former standing as the primary builder of a child's social and psychological formation.

- Parent-training workshops. Local social-affairs and education departments could run short, hands-on sessions for mothers and fathers. Topics would range from the principles of positive discipline to the twin challenges of adolescent mood swings and unfiltered digital content.

- Awareness media. Regional radio and television slots might lay bare the long-term cost of parental neglect while, at the same time, offering concrete portraits of families that have managed to keep both warmth and structure.

- Family-life content in the curriculum. A practical proposal is to weave basic lessons on household communication and relationship skills into existing civics periods or into co-curricular clubs, so pupils learn early how a healthy family system works.

2. Value-Centered Guidance at Home

Moral prevention begins in the living room. Thus, fostering a culture of dialogue, mutual respect, and belonging is key.

- Shared decision-making. Involving children in small household choices nurtures their sense of responsibility.
- Weekend rituals. Joint outings, collaborative cooking, or visits to extended kin thicken emotional bonds and create a supportive climate.

2. Steering Digital Media inside the Home

Social-network sites now rival parents for influence. Total bans rarely work, yet doing nothing lets the screen win by default. A wiser path is to draft clear family pacts on screen hours and, step by step, train children to police their own online habits.

IV. Recommendations

Drawing on the foregoing analysis, the following research-based proposals target families, the wider community, and public institutions. All aim to curb youth deviance that stems from a weakened household role.

A. Recommendations for Families

1. **Strengthen parents' emotional and physical presence** by reserving daily time for conversation and psychological support, even amid work and life pressures.
2. **Restore the role of a "positive role model" in the household** by consistently demonstrating behaviors worth imitating, particularly in moral and ethical situations.
3. **Maintain continuous educational supervision** alongside school efforts, rather than treating formal instruction as the sole builder of a child's character.
4. **Boost parents' digital awareness** and accompany children on social-media platforms, setting firm boundaries and offering ongoing guidance.

B. Recommendations for Schools and Other Educational Bodies

1. **Tighten school–home collaboration.** Schedule regular parent–teacher gatherings and, at the same time, roll out simple digital platforms that let both sides track a pupil's conduct and value development in real time.
2. **Open family-awareness corners on campus.** Use clubs or parent associations to run short workshops where mothers and fathers pick up practical skills in both psychological support and digital supervision.
3. **Keep staff training alive.** Offer ongoing courses that show teachers how modern socialization works and how to engage more effectively with each learner's household context.

C. Recommendations for Civil Society and the Media

1. **Run nationwide outreach on family fragility.** Explain, in plain language and with real-life examples, how a weakened household structure feeds directly into youth deviance.
2. **Empower neighborhood NGOs.** Encourage local associations—especially in under-resourced districts—to act as go-betweens for schools and families.
3. **Produce constructive media content.** Highlight stories that celebrate traditional family values and underline the power of solid role models in shaping a balanced generation.

D. Recommendations for Public Authorities and Policy-Makers

1. **Draft family-friendly social policies.** Combine targeted financial aid, incentives that reward household stability, and access to decent housing—priority to low-income and single-parent units.

2. **Set up counselling hubs for troubled families.** Give parents a safe place to talk, seek educational advice, and resolve conflicts before they escalate.

3. **Build family education into national schooling.** Embed the topic in curricula and require it in teacher-training programs.

Shielding Algerian youth from deviance starts with repairing the family setting and restoring its educational and moral weight. Meeting that goal demands a coordinated national effort—parents, schools, media outlets, civil groups, and government working in concert to raise a generation that stands firm against destructive influences and engages thoughtfully with the challenges of our time.

Conclusion

The family's waning influence in Algeria is no passing adjustment in lifestyle; rather, it signals a deep reworking of the traditional socialization scaffolds that once seeded values and regulated conduct. Both survey data and field studies tie this decline to sharper spikes in youth deviance, weaker moral discipline, and an unsettling rise in alienation.

Several forces converge here. Economic strain—poverty, chronic unemployment—shrinks household stability. Daily pressures, including long work shifts, sap the hours parents can spend with their children. Add an unfiltered digital sphere, and the result is clear: during the very stages when guidance matters most, the parental voice grows faint. Into that silence slip unmonitored outside influences that chip away at the young person's moral footing and steer some toward risky behavior.

Curbing this drift is not the parents' task alone. It calls for concerted action—family, school, mass media, religious and cultural bodies all pulling in the same direction. Where the household regains coherence and authority, it still offers the best shield: a setting that fosters psychological wellbeing, ethical self-control, and constructive civic engagement.

Ultimately, the crucial wager is less about drafting solutions than about mustering the political and social will to carry them out. Algeria needs a broad national agenda that fortifies the family. A society unwilling to guard its own households will find it difficult—if not impossible—to safeguard its youth, or its future.

Acknowledgment

The authors would like to express their gratitude to Yahia Fares University, Médéa, Algeria, for providing the academic environment that facilitated the completion of this research. Special thanks are extended to colleagues and peers who contributed constructive feedback during the development of this article.

Conflict of Interest

The authors declare no conflict of interest related to the publication of this article.

References

1. Al-Aissaoui, A. A.-R. (2004). *Social psychology*. Cairo: Dar al-Ma'rifa al-Jami'iyya.
2. Arab Centre for Criminological and Social Research. (2019). *Field study on the causes of juvenile delinquency in the Arab world*. Cairo: League of Arab States.
3. Belkacem, N. (2018). The role of familial value deficiency in youth deviance. *Journal of Social Research and Studies, University of Oran*.
4. Ben Ghazal, S. (2021). Economic deprivation and its relation to adolescent deviance in vulnerable urban areas. *Journal of Human and Social Resource Development, University of Oran 2*.
5. Ben Zidane, H. (2020). The impact of new media on behavioural patterns among Algerian youth. *Journal of Humanities and Social Sciences, University of Médéa*.

6. Bouchama, A. A.-K. (2019). Poverty and its repercussions on the educational function of the Algerian family. *Journal of Social and Human Sciences, University of Guelma*.
7. Bouzidi, W. (2019). Modern media and value transformations among Algerian youth. *Journal of Social Research, University of Algiers 2*.
8. Khalfaoui, F. (2019). Parental non-supervision and its repercussions on youth deviance: A field study in Tipaza. *Journal of Human and Social Sciences, University of Blida 2*.
9. Laouadj, S. (2021). The crisis of value referencing among Algerian youth in the age of new media. *Family and Society Studies Review, University of Tebessa*.
10. Najafov, R. (2021). The problem of deviantism and its essence. *Zien Journal of Social Sciences and Humanities, 1*(1), 96–103. https://zienjournals.com/index.php/zjssh/article/view/43
11. Najafov, N., & Najafov, R. (2024). The problem of deviance in young people and methods of overcoming this problem. *Science, Education and Innovations in the Context of Modern Problems, 6*(3–4), 41–54.
12. Najafov, R. (2025). A comprehensive study of the factors and patterns of formation of deviant behavior among young people. *Science, Education and Innovations in the Context of Modern Problems, 8*(1), 748–771. https://doi.org/10.56352/sei/8.1.49
13. Najafov, R. (2025). The problem of deviance as a social psychological factor in the social dynamics of society. *Science, Education and Innovations in the Context of Modern Problems, 8*(4), 21–29. https://doi.org/10.56334/sei/8.4.03
14. National Office of Statistics. (2022). *Annual report on marriage and divorce in Algeria*. Algiers: Ministry of the Interior and Local Authorities.

Science, Education and Innovations in the Context of Modern Problems

Issue 11, Vol. 8, 2025

Title of research article

La digitalisation comme outil de dynamisation de la gouvernance d'entreprise : étude de cas d'une PME Algérienne (CASA Médical)

Digitalization as a Tool for Boosting Corporate Governance: Case Study of an Algerian SME (CASA Médical)

Kendouli Narimane
PhD student
Ecole des Hautes Etudes Commerciales, Koléa
Algeria
E-mail: n.kendouli@hec.dz, Orcid: 0009-0008-1216-5124

Kandi Mohamed Amine
Doctor
Ecole des Hautes Etudes Commerciales, Koléa
Algeria
E-mail: a.kandi@hec.dz , Orcid:0000-0002-3471-5640

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Digitalisation, Gouvernance d'entreprise, PME, asymétries d'informations, enracinement des dirigeants, Contexte Algérien

Abstract

Le but de ce travail est de démontrer l'impact de la digitalisation sur la gouvernance d'entreprise à travers une étude de cas menée au sein de la PME algérienne CASA médical. Dans un contexte où les entreprises algériennes amorcent graduellement leur transition digitale, la question de la réduction des asymétries d'informations entre les parties prenantes, l'atténuation de l'opportunisme et d'enracinement des dirigeants prend une importance croissante. Pour ce faire, une démarche qualitative basée sur un guide d'entretien semi-directif a été mobilisée, d'où on analyse comment les outils digitaux conditionnent le partage de l'information et la prévision des comportements opportunistes. Les résultats confirment que la digitalisation favorise une transparence accrue et une meilleure traçabilité. L'étude met en évidence les opportunités offertes par la digitalisation pour renforcer la gouvernance d'entreprise, et souligne les limites structurelles du contexte Algérien. On conclut notre article par des recommandations pour les PME et des pistes de recherches futures.

Citation. Kendouli, N., Kandi, M, A., (2025). La digitalisation comme outil de dynamisation de la gouvernance d'entreprise : étude de cas d'une PME Algérienne (CASA Médical). *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 370–381. https://doi.org/10.56352/sei/8.11.29

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 22.01.2025 | Accepted: 13.05.2025 | Published: 01.09.2025 (available online)

Introduction :

Après les faillites spectaculaires de grandes entreprises en 2002 aux États-Unis, et même avant cela dans d'autres pays, le concept de gouvernance d'entreprise prend de plus en plus d'importance. Aujourd'hui, la gouvernance d'entreprise est au cœur des débats relatifs à la durabilité, à la performance des entreprises et

à l'amélioration de l'efficience économique. Dans ce contexte, la digitalisation apparaît comme une opportunité pour améliorer les pratiques de gouvernance et créer de la valeur pour toutes les parties prenantes de l'entreprise.

Il est donc primordial d'analyser la corrélation entre la digitalisation et l'amélioration de la gouvernance d'entreprise en Algérie. À cet effet, nous tenterons de répondre à la problématique suivante :
« Quel est le rôle de la digitalisation dans l'amélioration de la gouvernance d'entreprise de CASA Médical ? »

À cette problématique s'ajoutent plusieurs questions secondaires :

- Comment la digitalisation a-t-elle changé la manière dont l'information est partagée au sein de l'entreprise ?
- Dans quelle mesure la digitalisation a-t-elle contribué à réduire l'asymétrie de l'information dans l'entreprise ?
- En quoi la digitalisation peut-elle contribuer à atténuer les risques d'opportunisme ?
- Comment la digitalisation a-t-elle modifié la nature ou l'ampleur des conflits d'agence au sein de l'entreprise ?

Pour répondre à cette problématique, nous allons suivre le plan suivant :

1. Cadre théorique et revue de la littérature

1.1. Définition de la gouvernance d'entreprise :

Pour Perez (2009), la gouvernance d'entreprise se définit comme étant « une discipline ayant pour objet central les dirigeants, qui s'exerce au bénéfice des parties prenantes à travers un dispositif institutionnel spécifique (S-P-C) ».

- **(S)** représente l'ensemble des structures internes (conseils d'administration, assemblées générales, etc.) et des structures externes (marchés financiers, autorités de régulation, etc.);
- **(P)** désigne les procédures plus ou moins explicites telles que les lois, règlements, recommandations, codes de déontologie ;
- **(C)** renvoie aux comportements, qui varient selon les objectifs poursuivis par les agents économiques.

L'articulation de ces trois composantes (S-P-C) définit la manière dont le système de gouvernance est structuré et régulé. Le contenu institutionnel des dispositifs de gouvernance repose sur l'ensemble des structures et procédures, tandis que la mise en œuvre et l'animation du système de gouvernance dépendent du comportement des individus

1.2. La digitalisation : Un état de l'art

G. Babinet distingue, dans son ouvrage *Ère numérique, nouvel âge pour l'humanité* (cité par J.M, 2017), trois périodes clés de l'évolution numérique des sociétés :

a. La période du matériel informatique (1945–1985)

L'apparition de l'informatique permet le remplacement progressif des documents physiques par des supports numériques. Les opérations administratives sont informatisées grâce à des applications indépendantes, comme l'informatisation de la comptabilité ou de la gestion des ressources humaines. Dès les années 1970, apparaissent les premiers réseaux locaux.

b. La période du logiciel (1985–2005)

Des plateformes informatiques et des logiciels de gestion intégrée apparaissent. La communication interne et externe devient plus fluide grâce aux ERP. L'essor du e-commerce est marqué par des jalons comme le lancement de la première plateforme commerciale en ligne dans les années 1990, la création de Google en 1998, ou encore l'émergence de Yahoo, eBay et Amazon.

En 2002, le Cloud computing est lancé, ouvrant une nouvelle ère technologique et bouleversant les dynamiques économiques, marquant l'entrée dans l'économie numérique

c. La période de la donnée (2005 à nos jours) :

Cette phase est caractérisée par l'explosion des données (Big Data), l'utilisation intensive du Cloud, l'interactivité via les réseaux sociaux et les échanges en ligne (e-commerce, e-mails, etc.).

Aujourd'hui, la notion de donnée renvoie au concept de Big Data. Selon L. Bremme (2016), « le Big Data est un ensemble très volumineux de données qu'aucun outil classique de gestion de l'information ne peut vraiment traiter ».

1.3. La digitalisation et la gouvernance d'entreprise

La digitalisation, couplée à l'intelligence artificielle et à la blockchain, bouleverse profondément la gestion des entreprises. Dans certains pays, la gouvernance numérique fait déjà partie intégrante des pratiques : le Royaume-Uni, l'Afrique du Sud, les Pays-Bas ou encore la Russie ont intégré la gouvernance des risques technologiques dans leurs codes de gouvernance d'entreprise (depuis 2016).

Les bénéfices attendus de la digitalisation incluent :

- L'accélération des processus décisionnels
- L'amélioration de la transparence
- La prévision des risques
- Le suivi des résultats

Une étude menée en 2015 par le Forum économique mondial révèle que 75,4 % des PDG interrogés estiment que d'ici 2025, 30 % des audits d'entreprise seront réalisés par intelligence artificielle. De plus, 45,2 % pensent que des robots dotés d'IA pourraient intégrer les conseils d'administration.

2. Présentation de l'Etude de cas « CASA MEDICA »

CASA MEDICA Sarl est une société Algérienne active sur le marché Algérien depuis 2007. Elle est spécialisée dans les domaines de la physiothérapie, de la médecine physique, de la médecine sportive et de la médecine esthétique. Son rôle principal est de fournier un soutien décisionnel afin de :

- Informer les pouvoirs publics sur l'état des connaissances scientifiques, leurs implications médicales, organisationnelles ou économiques, ainsi que leur impact sur la santé publique.
- Aider les établissements de santé à répondre aux besoins des patients afin d'améliorer la qualité des soins.
    - Soutenir les professionnels de la santé et les aider à développer et mettre en œuvre les meilleures stratégies diagnostiques et thérapeutiques selon les critères requis.
    - Offrir aux clubs sportifs et aux différents centres de fitness la possibilité d'être équipés des dernières technologies.

- S'assurer que les besoins de la médecine esthétique et des centres de bien-être sont satisfaits et offrant les dernières innovations dans le domaine de l'esthétique et de l'amincissement.

Son acticité est divisée en trois domaines :

- Commercial : Promotion et ventes.
- Technique : Installation, suivi technique et entretien des équipements.
- Formation : Organisation, promotion et prestation de formations, de cours et de séminaires sur le biomédical.

Leurs principaux clients :

- Hôpitaux publics ou militaires spécialisés
- Cliniques et cabinets privés
- Physiothérapeutes et médecins de réadaptation (MPR)
- Clubs et fédérations sportives
- Centres de fitness et de bien-être
- Centres de thalassothérapie
- Centres sportifs
- Centres de beauté et minceur

3. Méthodologie :

Cette recherche empirique fait l'objet d'une enquête qualitative via des entretiens semi-directif (voir le guide d'entretien en annexes), menées auprès des acteurs de la gouvernance de notre étude de cas CASA médical, représentant différentes fonctions clés : direction, technique,direction financière, audit interne, conformité, gestion,etc. Nous avons obtenus des informations nécessaires pour détecter la corrélation entre l'amélioration de la gouvernance d'entreprise et la digitalisation, à travers trois axes basés sur trois hypothèses à savoir :

 La digitalisation, en améliorant l'accessibilité et la disponibilité de l'information, et en facilitant la communication interne, réduit les asymétries d'information entre les parties prenantes.

 L'optimisation des mécanismes de contrôle par les outils digitaux contribue à limiter les comportements opportunistes des dirigeants.

 En renforçant la transparence, la responsabilisation et l'efficacité managériale, la digitalisation permet de faire face aux différentes formes d'enracinement des dirigeants.

Les entretiens ont duré en moyenne entre 45 et 60 minutes, en présentiel,et ont fait l'objet d'un enregistrement audio suivi d'une transaction intégrale.
L'analyse de cette étude empirique qualitative passe en premier lieu par l'analyse des réponses des interviewées.

3.1. Profil des répondants :

Le tableau suivant présente les profils codés des répondants, selon leur fonction, afin de contextualiser leur contribution à l'analyse de l'impact de la digitalisation dans la gouvernance d'entreprise :

Tableau n° 01 : Profil des interviewés

Code	Fonction
R1	Directeur technique (Médecin en pharmacie)
R2	Fondatrice (Ingénieur polytechnique)
R3	Responsable audit interne
R4	Directeur financier

R5	Expert-comptable agrée
R6	Responsable conformité
R7	Co-manager (Responsable de la gestion d'entreprise)
R8	Consultant en gouvernance

Source : établi par l'auteur, données issues des entretiens

3.2. Justification du nombre restrient d'entretiens

Le nombre de huit entretiens, bien qu'apparu restreint, est justifié méthodologiquement pour trois raisons principales :

- Saturation théorique : Après le7e entretien aucune information nouvelle n'est apparue, ce qui correspond au seuil de saturation reconnue en recherche qualitative (Guest et al.,2006)
- Spécificité du terrain : une seule PME famillíale àstructure managérial compacte (Etude de cas), limitant automatiquement le nombre de profils pertinents à interroger.
- Diversité fonctionnelle : nous avons sélctionner les répondants pour garantir une variété de perspectives internes (direction, technique, finance, conformité, conseil), renforçant la richesse des données malgré le nombre restrient d'entretiens.

3.3. Traitement des données par codage thématique

Les verbatims issus des entretiens ont été analysés manuellement selon la méthode du codage thématique inductif, en trois étapes :

1. Codage ouvert : identification dans les propos des interviewés les unités de sens significatives.
2. Codage axial : regroupement en catégories intermédiaires des extraits.
3. Codage sélectif : organisation des résultats autour des thèmes centraux liés aux hypothèses posées.

Le traitement a été réalisé manuellement, sur tableau Exel, nous avons croisez les données issues des différents répondants dans le but de faire émerger des régularités.

3.4. Analyse thématique qualitative

Les principaux axes thématiques identifiés à la suite de l'analyse qualitative des entretiens sont présentés dans le tableau ci-dessous:

Tableau n° 02 : Analyse thématique qualitative

Thèmes principaux	Éléments relevés
Le partage d'information	Fluidité, centralisation, visibilité en temps réel grâce aux outils digitaux
La réduction de l'asymétrie informationnelle	Accès équitable à toutes les données, transparence dans tous les départements.
Le risque d'opportunisme	Favoritisme, manipulation des chiffres, usage excessif des ressources.
L'impact de la digitalisation	Suppression des comportements opportunistes, automatisation des enregistrements, traçabilité
La détection et la prévision d'abus	La détection d'anomalies internes via les ERP.
Les conflits d'agences	Réduction des conflits d'agence en partageant des données mesurables.
Les outils digitaux efficaces	ERP, reporting automatisé, signature électronique, tableaux de bord interactifs
Le contexte Algérien	Adoption tardive, besoin de formations.

Source : établi par l'auteur, données issue des entretiens

3.5. Lien entre hypothèses et résultats

Tableau n°03 : Tableau de synthèse

Hypothèse	Exemple de verbatim observés	Validation empirique
H1 : La digitalisation réduit l'asymétrie d'information	« le partage des chiffres de vente et de stock se fait via Google Drive ou l'ERP... », « tout les employeés ont accès au meeme reporting... »	Validée – Transparence accrue et centralisation
H2 : La digitalisation limite l'opportunisme des dirigeants	« Les décisions sont plus traçables », « On ne peut pas tricher tant que les signatures sont horodatées », « Toutes les réunions en ligne sont enregistrées »	Validée- Traçabilité et contrôle amliorés
H3 : La digitalisation permet de limiter l'enracinement des dirigeants	« Pas de décision concentrées entre deux personnes ou entre un seul groupe », « Les anomalies sont visibles en temps réel. » « tout le monde accède aux données, même les associés à distance "	Changement observé : moins de pouvoir centralisé, mais des limites culturelles persistantes.

Source : établi par l'auteur

4. Résultats :

4.1. Digitalisation et partage de l'information

CASA Médical a transformé en profondeur ses processus de communication grâce à la digitalisation. Un partage fluide et en temps réel de l'information est établi via des outils tels que les plateformes de messagerie professionnelle, les ERP, les tableaux partagés... Ce recours a réduit la dépendance aux échanges informels et aux réunions physiques.

« Aujourd'hui, nous avons la possibilité d'avoir une information plus visible par tous les responsables et presque en temps réel, en utilisant des outils comme WhatsApp Business, des tableaux partagés sur Google Drive et un ERP local qui centralise les commandes, les stocks et les vents. » R4.

4.2. Réduction de l'asymétrie de l'information

L'asymétrie d'information entre les différents niveaux hiérarchiques a été réduite de manière notable en assurant l'accès équitable aux données opérationnelles de l'entreprise. Grâce à cette centralisation des données, les décisions prises par les dirigeants sont devenues plus objectives et peuvent être partagées.

« Avec l'accès à la même base de données clients, aux prévisions et aux chiffres de ventes par les commerciaux, les logisticiens et les décideurs, nous avons pu éviter que certains aient plus d'informations que d'autres et qu'ils prennent des décisions à leur avantage » R7.

4.3. Risques d'opportunisme des dirigeants

Le manque de transparence et de contrôle facilite les comportements opportunistes des dirigeants. L'entreprise identifie plusieurs risques d'opportunisme de la part des dirigeants tels que la manipulation des chiffres, la surexploitation des ressources à des fins personnelles, le favoritisme

dans l'octroi d'avantages injustifiés du marché.

« Un dirigeant peut justifier certaines dépenses juste en gonflant artificiellement les besoins ou en faussant les rapports » R3.

4.4. Contribution de la digitalisation à la régulation

Avec les outils digitaux, chaque action ou transaction laisse une trace, ce qui permet une traçabilité complète ; il est difficile de cacher une opération suspecte. Cela limite les marges de manœuvre pour des comportements opportunistes et incite les dirigeants à être plus prudents.

« Quand tout est enregistré : commandes, approbations, mouvements de stock, etc., on détecte les comportements anormaux dans la gestion, prouvées par une incohérence entre les ventes réelles et les achats enregistrés "R5.

4.5. Conflits d'agence et outils digitaux

La digitalisation a également réduit certains conflits d'agence, notamment entre les actionnaires et les dirigeants, en rendant les données disponibles et plus objectives par la mise en place de tableaux de bord partagés et de systèmes de reporting.

« Les discussions sont plus objectives grâce aux outils de reporting. On peut affirmer que les chiffres sont fiables. » R8.

4.6. Outils digitaux favorisant la gouvernance

CASA Médical utilise une palette d'outils digitaux : ERP, tableaux de bord interactifs, reporting automatisé, plateformes de signature électronique. Ces outils permettent un contrôle meilleur, une transparence accrue et une grande responsabilisation des acteurs, cela facilite la concrétisation des pratiques de la bonne gouvernance.

« ... Oui, je confirme que l'utilisation des tableaux de bord partagés, des audits numériques, des outils de signature électronique sécurisée et des plateformes de reporting automatisées permet plus de transparence et un meilleur contrôle. Avec l'utilisation de ses outils, la marge d'interprétation ou de manipulation se réduit et le climat de confiance se crée. "R1.

4.7. Spécificité du contexte Algérien

En Algérie, nous sommes encore au début du chemin. Beaucoup d'entreprises restent attachées à des pratiques traditionnelles, bien que ce soit un levier important pour une gouvernance plus efficace. Elles hésitent à digitaliser par manque de moyens et peur du changement. Ce retard dans l'adoption digitale constitue un réel frein.

Pour accélérer la transition, le soutien institutionnel via des programmes d'accompagnement ou des incitations fiscales serait nécessaire.

« La digitalisation offre de vraies opportunités pour renforcer la gouvernance, mais sans accompagnement, les outils seuls ne suffisent pas. Les décideurs ont encore une résistance culturelle et un manque de formation digitale, c'est le moment de changer les mentalités » R8.

5. Discussion :

Dans le cadre de cette étude qualitative les résultats obtenus mettent en lumière le rôle croissant que joue la digitalisation dans le renforcement de la gouvernance d'entreprise en Algérie. Les apports majeurs dégagés sont les suivants :

- L'atténuation de l'opportunisme des dirigeants
- L'atténuation des conflits d'agence
- L'amélioration de la transparence informationnelle

5.1. Convergence avec la littérature

Les données analysées confirment plusieurs constats établis dans la littérature :

- La digitalisation améliore la transparence informationnelle, comme les montrent également les travaux de **Gealy & Palepu (2001)** et **Bushman et al (2004)** sur la réduction de l'asymétrie d'information par le digital.
- L'accès aux données et la traçabilité via des outils numérique (ERP, Business Intelligence, plateforme de gouvernance) ont permis de limiter les comportements opportunistes, ce qui rejoint les travaux de Lensen **& Meckling (1976)** dans le cadre de la théorie de l'agence.
- Enfin,La digitalisation renforce les capacités de contrôle managérial et de surveillance des dirigeants, ce qui va avec les études de **Weill & Ross (2004)** et de **Tapscott et al (2006)** sur la gouvernance numérique.

5.2. Apports spécifiques au contexte Algérien

Plusieurs éléments confirment que la généralisation des outils digitaux reste limitée en Algérie et que le contexte Algérien possède des spécificités importantes :

- La digitalisation pourrait jouer un rôle plus stratégique en gouvernance, au lieu d'être perçue comme un outil technique uniquement.
- Le déploiement optimal des outils est freiné par manque de compétences digitales et une résistance culturelle persistante.
- L'usage de numérique est rarement intégré dans les processus de contrôle stratégique, il reste généralement limité aux fonctions administratives.

5.3. Implications pratiques

On déduit plusieurs implications pour les entreprises algériennes à partir des résultats de cette recherche :

- La nécessité d'une prise de conscience managériale pour faire de la digitalisation un véritable levier de gouvernance.
- La nécessité de l'accompagnement structurel ainsi que le renforcement de la formation des dirigeants à la gouvernance digitale.
- La nécessité d'intégrer dans le processus décisionnels les outils de reporting interactif et de traçabilité.

De même, pour une véritable diffusion de bonnes pratiques digitales, les organismes d'accompagnement et les pouvoirs publics (ANDPME, CACI, CNRC...) peuvent jouer un role important dans la diffusion de ces pratiques.

5.4. Confirmation partielle des hypothèses

En confrontant les résultats aux hypothèses formulées, on peut conclure que le modèle théorique a été validé globalement, avec quelques nuances :

- Il est largement accepté que la digitalisation a un impact sur l'asymétrie d'information en facilitant l'accès et l'interprétation partagés des données.
- Il est largement accepté que la digitalisation a un effet sur l'opportunisme en agissant comme un mécanisme de régulation.

- L'impact sur l'ancrage est en cours, mais il reste encore partiellement conditionné par les facteurs humains et culturels.

5.5. Limites de l'étude :

On constate les limités méthodologiques suivantes :

- L'impossibilité de généraliser les résultats, vu le nombre restreint d'entretiens.
- Bien que les profils des répondants soient variés, ils ne couvrent qu'un seul secteur d'activité (Notre Cas d'étude, le secteur tertiaire)

  Néanmoins, la richesse des discours recueillis et la diversité des fonctions représentées permettent de compenser partiellement ces limites.

5.6. Perspectives de recherche

A la suite de cette recherche plusieurs pistes peuvent être explorées :

- Une étude quantitative sur un échantillon plus large afin de tester statistiquement les corrélations entre la digitalisation et la qualité de gouvernance.
- Une analyse sectorielle approfondie. Permettant de comparer les effets de la digitalisation dans différents domaines d'activité.
- Une étude sur les facteurs de succès de lagouvernance digitale dans les PME Algérienne.

Conclusion :

La gouvernance d'entreprise vise à garantir un fonctionnement efficace, aligné sur les objectifs stratégiques, tout en protégeant les intérêts des différentes parties prenantes (dirigeants, actionnaires, administrateurs et parties externes). Elle permet également une meilleure gestion des risques et un encadrement plus rigoureux des processus décisionnels.

Avec l'avènement du digital, la digitalisation apparaît comme un levier stratégique susceptible de renforcer les pratiques de la gouvernance.

Le présent travail apporte une indication sur l'efficacité des outils digitaux à transformer la manière dans les entreprises algériennes perçoivent et pratiquent la gouvernance.

Cette dynamique est bien illustrée dans le cas de l'entreprise CASA Médical, spécialisée dans les domaines de la physiothérapie et de la médecine esthétique. Grâce à l'adoption progressive des solutions digitales : ERP, plateformes de communication, cloud computing, ...l'entreprise a réussi à mieux gérer ses flux informationnels, dynamiser ses processus de contrôle interne et à instaurer un climat de confiance entre les parties prenantesCependant, des défis importants subsistent, notamment en matière de :

- Formation des cadres,
- Adaptation culturelle au digital
- Sécurisation des données.

Néanmoins, ladigitalisation n'est pas une solution en soi, mais un levier conditionnel, dont l'efficacité dépond :

- du degré d'intégration stratégique
- des compétences digitales des acteurs
- et des conditions organisationnelles propres à chaque entreprise

Cette étude encourage à examiner plus en profondeur les nouvelles formes de gouvernance digitale en Algérie, en combinant des méthodes qualitatives et quantitatives pour une validation empirique à plus grande échelle.

Référence :

1- Abdennadher cheffi, S (2011). Les effets du vote par internet aux assemblées générales des actionnaires sur la gouvernance d'entreprise actionnariale, revue Recherches en Sciences de Gestion-Management Sciences-Ciencias de gestión, n° 87, 69 – 92 https://doi.org/10.3917/resg.087.0067.

2- Charreaux G, & Desbrières Ph.(1998), Gouvernance des entreprises : valeur partenariale contre valeur actionnariale, Finance Contrôle Stratégie, vol. 1, n° 2, p. 57-88.

3- Djilali C,& Lahchame K (2021). La digitalisation des entreprises : une opportunité pour leur performance économique, Journal of Contemporary Business and Economic Studies Vol 48, N°2, 520-529.

4- Galière, S. (2020). *Travailler via des plateformes numériques : une approche en termes d'instruments de gestion*. Thèse de doctorat, Université de Nantes.

5- Grouve, H., et al. (2018). *Digitalisation impacts on corporate governance*. *Journal of Governance and Regulation*, 7(4), 51–63. https://doi.org/10.22495/jgr_v7_i4_p6

6- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, vol, n°4, 305–360.

7- Kandi MA et all (2019). L'audit et le contrôle interne comme outil de dynamisation de la gouvernance d'entreprise en Algérie. *Revue des Réformes Economiques et Intégration En Economie Mondiale*, *Vol 113 n° 02*, 1-17.

8- Mendy M, (2014). Analyse des pratiques de gouvernance dans les entreprises Sénégalaises, revue vie est science de l'entreprise, vol 2, n°198, 55-72. https://doi.org/10.3917/vse.198.0055

9- Mighiss. S,et all (2021). L'audit à l'ère de la transformation digitale. Revue du contrôle, de la comptabilité et de l'audit, Volume 5, N° 1. 193- 209. https://doi.org/10.5281/zenodo.5595403.

10- Mimouni Y. (2012). Le développement des PME et la gouvernance, Cas filiale Trans-canal, Ouest SPA. Thèse de magister, Université Abou-Bakr Belkaid- Tlemcen

11- Nguefack PJ (2021). Nouvelles technologies : un levier d'amélioration de gouvernance d'entreprises en contexte Camerounais, *International Journal of Economic Studies and Management,* , vol1, n°3, 295-311. https://doi.org/10.52502/ijesm.v1i3.204.

12- PARRAT F. (2014). théories et pratiques de la gouvernance d'entreprise pour les conseils d'administration et les administrateurs, édition Maxima, 42-43.

13- Shleifer A. et Vishny R.W. (1997). A Survey of Corporate Governance. Journal of Finance, vol. 52. 737-783.

14- Weber C et Gomez P-Y. (2008). Les mutations du gouvernement d'entreprise. l'expansion management review, vol 4, n°131, https://doi.org/10.3917/emr.131.0020

Annexes :

Annexe 1 : guide d'entretien pour l'étude qualitative

الجمهـــورية الجزائرية الديمـــقـــراطية الشـــعبية
République Algérienne Démocratique Et Populaire

Ministère de l'Eseignement Supérieur et de la Recherche Scientifique
Ecole des Hautes Etudes Commerciales

HEC ALGER Entreprendre et Innover

وزارة التعليم العالي و البحث العلمي
مدرسة الدراسات العليا التجارية

Enquête dans le cadre d'une recherche scientifique

Chère Madame, Cher Monsieur,

Dans le cadre de l'élaboration d'un article scientifique, nous entreprenons une recherche portant sur le thème : « **La digitalisation comme outil de dynamisation de la gouvernance d'entreprise dans un contexte Algérien** »

Ce guide d'entretien constitue l'un des volets les plus importants de cette recherche, il a pour but d'étudier et d'analyser les opinions des principaux acteurs de la gouvernance d'entreprise sur **le rôle joué par la digitalisation dans l'amélioration de la gouvernance d'entreprise** à travers la réduction de l'asymétrie de l'information entre partie prenantes, l'atténuation de l'opportunisme et le contrôle de l'enracinement.

Nous vous prions de bien vouloir répondre à cette enquête, Nous nous engageons à assurer l'anonymat de vos réponses, car toutes les informations que vous donnez seront traitées uniquement à des fins statistiques et dans le cadre de cette recherche universitaire. Votre collaboration favorisera la recherche scientifique en Algérie et aidera à montrer l'apport de la digitalisation à la gouvernance d'entreprise.

Nous vous remercions d'avance pour votre précieuse compréhension

- Comment la digitalisation a-t-elle changé la manière dont l'information est partagée au sein de votre organisation ?
- Dans quelle mesure la digitalisation a-t-elle contribué à réduire l'asymétrie de l'information dans votre domaine ?
- Quels sont, selon vous, les principaux risques d'opportunisme auxquels une entreprise peut être confrontée de la part de ses dirigeants ?
- Dans quelle mesure pensez-vous que la digitalisation peut contribuer à atténuer ces risques d'opportunisme ?
- Avez- vous des exemples ou des cas où la digitalisation a été utilisée avec succès pour détecter ou prévenir des comportements opportunistes de la part des dirigeants ?
- Comment la digitalisation a-t-elle modifié la nature ou l'ampleur des conflits d'agence dans votre entreprisse ?
- Pensez-vous que certains outils ou pratiques numériques spécifiques peuvent aider à résoudre ou à prévenir les conflits d'agence ? Si oui ? Lesquels ?

Nous arrivons à la fin de cet entretien. Avez-vous d'autres commentaires ou points que vous aimeriez ajouter concernant la digitalisation et la gouvernance d'entreprise en Algérie ?

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

From Traditional Governance to Digital Governance: The Road to Sustainable Development – A Case Study of Condor Electronics in Algeria

Mabrouki Fateh
Dr
Faculty of Economics, Business and Management Sciences, Laboratory of the Sustainable Economic Institutions Business Management
University of Shahid Hama Lakhdar - El Oued
Algeria
E-mail: mabrouki-fateh@univ-eloued.dz

Youcefi Alaeddine
Dr
Institute of Law Governance Horizons Laboratory for Sustainable Local Development University Center of Barika
Algeria
E-mail: alaeddine.youcefi@cu-barika.dz

Ounnoughi Nabil
Prof.
Institute of Law
Governance Horizons Laboratory for Sustainable Local Development
University Center of Barika
Algeria
E-mail: ounnoughi.nabil@cu-barika.dz

Ziouche Said
Prof.
Institute of Humanities and Social Sciences
University Center of Barika
Algeria
E-mail: said.ziouche@cu-barika.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Digital governance, dimensions of digital governance, sustainable development, dimensions of sustainable development

Abstract

The study aims to determine the impact of the dimensions of digital governance (digital participation, digital transparency, digital accountability, digital auditing) on the dimensions of sustainable development. The descriptive-analytical method was adopted, and the study model was constructed based on theoretical and field studies—both Arab and foreign—related to the study's topic. A case study was conducted in the fieldwork segment by selecting Condor Electronics in Algeria. A questionnaire was specifically prepared for this purpose and distributed to a sample of 70 employees. The data collected were statistically analyzed and processed using the statistical program (SPSS, v27).

The study reached several conclusions, the most notable of which is the existence of an effect of digital governance dimensions on the dimensions of sustainable development as a whole. The study also recommended the necessity of recognizing the importance of implementing digital governance, as it can influence the achievement of sustainable development dimensions.

Citation. Mabrouki F., Youcefi A., Ounnoughi N., Ziouche S. (2025). From Traditional Governance to Digital Governance: The Road to Sustainable Development – A Case Study of Condor Electronics in Algeria. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 382–397.

https://doi.org/10.56352/sei/8.11.30

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 15.05.2025	Accepted: 10.06.2025	Published: 01.09.2025 (available online)

1 Introduction

Progress toward enhancing the dimensions and objectives of sustainable development constitutes a complex challenge at the national level, given its integrated, interconnected, and intergenerational nature. This necessitates that governments rethink their organization, structure, and methods of operation. However, in practical application, governments face significant obstacles in overcoming traditional approaches, which have effectively failed to meet the demands of development and sustainability. This has led to the need to intensify efforts in search of a more suitable new approach.

Achieving the Sustainable Development Goals (SDGs) by 2030 requires a comprehensive transformation in how governments address the increasing challenges of development. It calls for rethinking the role of governments in the digital era and how they interact with society and the private sector. This must include their ability, in the context of digital transformation, to manage public affairs and respond effectively and seriously to the needs of their communities, as well as how to deliver services and manage development and the economy in a sustainable manner.

Digital governance is one of the responses to the digital transformation witnessed by institutions and organizations in the modern era. The importance of digital data and information has increased in communication and transactions, and digital government approaches now have the potential to accelerate the achievement of sustainable development goals and ensure that no one is left behind.

Problem Statement:

Accordingly, we pose the following research problem:

Does digital governance contribute to achieving the dimensions of sustainable development?

Research Hypotheses:

To answer the problem and achieve the study's objectives, the following main hypothesis was formulated:

There is no statistically significant effect of the dimensions of digital governance in promoting the dimensions of sustainable development at Condor Electronics at a significance level of ($\alpha \leq 0.05$).

Study Objectives:

The primary aim of this study is to highlight the contribution of the dimensions of digital governance in achieving the dimensions of sustainable development by confirming or refuting this effect.

This main objective branches into several sub-objectives, including:

- Providing a theoretical framework defining the concepts of digital governance and sustainable development, along with their respective dimensions.
- Attempting to identify the effect of implementing digital governance on achieving the dimensions of sustainable development in the institution under study.
- Attempting to present recommendations and suggestions based on the study's results to help highlight the impact of digital governance dimensions in achieving sustainable development dimensions.

2 A Knowledge-Based Introduction to Digital Governance

2.1 The Concept of Digital Governance

Before discussing digital governance, it is important to understand that the term consists of two components. We must first define the term governance, which is defined as:

"The exercise of political, economic, and administrative authority in managing the affairs of the state at all levels. Governance represents the mechanisms, processes, relationships, and institutions through which individuals and groups can express their interests, exercise their rights, fulfill their obligations, and resolve their differences: (smail, 2007). "

As for digitalization, it refers to the application of modern technology to achieve transparency, enable traceability of value chains, and serve customers and society in a more responsible and sustainable way, while making decisions based on data.

Accordingly, the concept of digital governance can be defined as: The use of information and communication technology (ICT) by public sectors to improve the delivery of information and services, encourage citizen participation in decision-making processes, and enhance the effectiveness, accountability, and transparency of government. (Ayachi, 2015)

It is also defined as: A system for control, oversight, and decision-making within the context of digital technology and information, aimed at directing and supervising the use of digital technology, achieving institutional objectives, enhancing transparency and accountability, reducing risks, and ensuring legal compliance. (Haja, 2023)

2.2 The Importance of Digital Governance:

The main benefits of digital governance can be summarized as follows: (Belkacem Boufateh, 2021)

- **Speed:** Digital governance facilitates task completion in a short time. Smartphones and online services enable the instant transfer of large volumes of data globally, which means that digital governance can accelerate service delivery and allow businesses and individuals to access information more quickly than in the past.
- **Cost Reduction:** Digital governance helps reduce expenses. Traditional methods involving written messages, paper records, and manual processes consume significant time, effort, and money. Replacing these with information technology and internet-based solutions can save substantial costs.
- **Transparency:** It contributes to making all business functions more transparent and clear. Transparency also allows citizens to access any information they need, whenever they want, with a simple click or touch.
- **Enhanced Communication:** Implementing digital governance can strengthen communication between the government and the business sector. This especially benefits entrepreneurs and startups, as it enables them to communicate effectively and compete with large corporations for investments or contracts. In this way, digital governance helps reduce monopolies and creates space for everyone.
- **Trust Building:** Digital governance helps build trust between governments and citizens, which is a key factor in good governance. It seeks to use strategies based on technology and the internet to engage citizens in general.
- **Operational Efficiency:** Digital governance aims to enhance overall operational efficiency. By using modern technologies, tasks and services can be executed more quickly and effectively, saving time and effort, which can then be redirected toward more beneficial activities.
- **Corruption Reduction:** One of the hallmarks of the digital age is the dominance of visibility, where everything is accessible and known to all. This means that corruption has fewer places to hide.
- **Accountability:** A natural consequence of transparency is accountability. Governments can be held accountable when mistakes are made. Digital governance indirectly improves performance, as the awareness that government actions are under public scrutiny pushes for continuous improvement.

2.3 Dimensions of Digital Governance

Several scholars and researchers agree on the key dimensions of digital governance, each of which is defined as follows: (Ahed Abdelkader Abu Ata, 2023)

- **Digital Participation:** This refers to enabling all stakeholders and concerned parties to participate in decision-making processes and express their opinions. It is achieved by facilitating access to information through the use of information and communication technology (ICT), allowing them to present their ideas and suggestions.
- **Digital Transparency:** This means clarity without ambiguity, allowing the public and stakeholders to know the truth without concealment or deception. It involves the institution's commitment to openly sharing and disclosing information about its activities and operations through ICT tools and modern technologies.
- **Digital Accountability:** This is the mechanism through which individuals and organizations are held responsible for actions and decisions related to the use of digital technologies and data. It assures stakeholders that activities are being conducted in the public interest.
- **Digital Auditing:** This refers to the activity of verifying that the organization's processes are aligned with established standards. Effective auditing requires active participation from stakeholders and uses modern information and communication technologies to obtain information quickly, with minimal effort and cost.

3. The Conceptual Framework of Sustainable Development

3.1 The Concept of Sustainable Development:

The concept of sustainable development has been defined in various ways by different researchers and authors. Among the most cited definitions:

Sustainable development is defined as *development that meets the needs of the present generations while preserving the future and the needs of coming generations, taking into account the protection of the environment and natural resource.* (P. Widloecher, 2009)

The World Bank defines sustainable development as: *"A process concerned with achieving intergenerational equity, ensuring that future generations have access to the same developmental opportunities as current ones, by maintaining or increasing overall capital over time."* (Al-Buraid, 2015)

Considering the numerous definitions, it is clear that sustainable development spans several domains. A report issued by the World Resources Institute (WRI)—a U.S.-based organization concerned with promoting sustainability—summarized ten widely used definitions of sustainable development and classified them into four categories: economic, social, environmental, and technological. These are summarized as follows. (Abdelghani, 2012–2013):

- **Economic Perspective:** In developed countries, sustainable development implies reducing energy and resource consumption. In developing countries, it involves mobilizing resources to raise living standards and reduce poverty.
- **Social and Human Perspective:** It involves striving for population growth stabilization and improving healthcare and educational services, particularly in rural areas.
- **Environmental Perspective:** It refers to the protection of natural resources and the optimal use of agricultural land and water resources.
- **Technological Perspective:** It involves transitioning society toward clean industries that use environmentally friendly technologies, minimize the emission of harmful gases, and reduce substances that damage the ozone layer and contribute to global warming.

3.2 Goals for Sustainable Development As stated in the United Nations 2030 Agenda

Adopted under the resolution "Transforming our world: the 2030 Agenda for Sustainable Development," the 2030 Agenda for Sustainable Development came out of the 70th session of the United Nations General Assembly in 2015.

As it lays a thorough action plan for people, the earth, and prosperity, this agenda reflects the most aspirational global agreement the United Nations has ever attained.

Defined as seventeen (17) Sustainable Development Goals (SDGs), these developmental goals—or global challenges—were compiled as follows to "save the world" (Nations, 2024) :

Goal 01- No Poverty: Finish poverty in all its manifestations wherever.

Goal 02- Zero Hunger: Finish hunger, attain food security and better nutrition, and support environmentally friendly farming.

Goal 03- Promote well-being for all at all ages and guarantee healthy life by means of this.

Goal 04- Guarantee inclusive and fair quality education as well as encouragement of lifelong learning possibilities for all.

Goal 05- Aim for gender equality and empower every female and girl.

Goal 06- Sanitation and Clean Water: Verify availability and sustainable management of water and sanitation for everyone.

Goal 07- Guarantee of affordable, dependable, sustainable, modern energy for all depends on ensuring access to these.

Goal 08- Promote steady, inclusive, sustainable economic growth, full and productive employment, and good work for all by means of decent work and economic development.

Goal 09- Industry, Innovation and Infrastructure: Create strong infrastructure, advance inclusive and sustainable industrialization, and encourage invention.

Goal 10- Reducing inequalities both inside and between nations

Goal 11- Make cities and human communities inclusive, safe, strong, and sustainable by design.

Goal 12- Promote sustainable consumption and production to guarantee such trends.

Goal 13- Acknowledging current agreements under the UNFCCC, take quick action to counteract climate change and its effects.

Goal 14- Sustainable development depends on the oceans, seas, and marine resources being conserved and used sustainably.

Goal 15- Manage forests sustainably, fight desertification, stop and reverse land degradation, protect, restore, and promote sustainable use of terrestrial ecosystems, so halting the loss of biodiversity.

Goal 16 - Promote peaceful and inclusive societies for sustainable development, give access to justice for all, and establish strong, responsible, and inclusive institutions.

Goal 17- Strengthen the tools of implementation and revive the worldwide cooperation for sustainable development by means of partnerships for the goals.

Figure showing the seventeen (17) Sustainable Development Goals follows:

Figure 1. The 17 Sustainable Development Goals – 2030 Agenda

1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

Source: United Nations, on the official website: https://news.un.org/ar/story/2015/09/236642

4. Digital Governance as One of the Pillars for Promoting the 2030 Sustainable Development Goals

4.1 Digitalization as a Means to Achieve the 2030 Agenda and Sustainable Development Goals

Digitalization and Information and Communication Technologies (ICT) play an undeniable role in accelerating progress in the implementation of the United Nations' seventeen Sustainable Development Goals (SDGs), given their positive contribution to reducing transaction costs, improving service delivery, diversifying revenue sources, and preserving and sustaining natural resources.

The United Nations has promoted an expanded vision of digitalization and the digital economy as enabling factors relevant to achieving the SDGs. The international organization also identified science, technology, and innovation—alongside development financing—as one of the two main means of implementation for achieving the SDGs by 2030.

Among the clear examples of the impact of digitalization on economic and social development in developing countries are mobile payment systems, which provide easy access to financial services for poor and marginalized populations. In India, innovations such as the *Unified Payments Interface* have successfully facilitated the integration of the poor into the digital economy.

Therefore, technology, knowledge, and the digital economy contribute to achieving the Sustainable Development Goals and can support the implementation of each of the seventeen SDGs, including healthcare, agriculture, poverty and hunger reduction, the creation of new jobs, mitigation of climate change effects, improvement of energy consumption efficiency, and making cities and communities more sustainable. (Mahmoud, 2022).

Among the Sustainable Development Goals for 2030, there are four main goals—specifically Goal 4, Goal 5, Goal 9, and Goal 17—that directly focus on the central role of digitalization and ICT in achieving sustainable development.

Below is a table illustrating these goals that are directly related to digitalization and information and communication technologies:

Board 1. Key Sustainable Development Goals Related to Digitalization and Information Technology

Goal	Target
Goal 4: Quality Education	Target 4.b: A significant rise in the number of scholarships available to developing nations for higher education, especially to least developed countries, small island developing States, African countries including vocational training and programs in technical, engineering, and scientific fields in developed countries and other developing countries.
Goal 5: Gender Equality	Target 5.b: Improve the use of enabling technology—in particular, information and communications technology—to help to empower women.

Goal 9: Industry, Innovation and Infrastructure	Target 9.c: Try to give least developed nations universal and reasonably priced access to the Internet and greatly expand access to information and communications technology.
Goal 17: Partnerships for the Goals	Target 17.8: By 2017 completely operationalize the technological bank and innovation, science, and technology building capacity mechanism for the least developed countries; also improve the implementation of enabling technology, especially technology for communication and information.

Source: (Velden, 2018)

4.2 Digital Governance and the 2030 Sustainable Development Goals

Digital governance represents a fundamental transformation in the ways governments conduct their affairs, aiming to keep pace with the tremendous advancements led by the private sector in the field of electronic services—delivering services and completing a large volume of transactions with clients via computers and the internet. Many countries have come to realize the importance of digital governance for sustainable development, as its primary objective is essentially the achievement of human development. Contemporary development thought presents human development as an entry point for sustainable development, which draws its sustainability from developing all individuals' capacities and empowering them to utilize and expand their potential.

The concept of sustainable development does not view the individual merely as a resource, a labor force, or a production factor, but rather as a moral being with the capacity for creativity and participation in community life. Implementing digital governance will lead to directing and managing economic and social development efforts, improving core social services such as healthcare and education, and building the necessary social and economic infrastructure for launching development processes and ensuring their sustainability. (S Maimouna Rezoug, 2023).

Governments, in collaboration with the private sector and civil society, will play a central role in implementing the 2030 Sustainable Development Goals. They must work to realize the principles and objectives of the agenda across public institutions at the local, national, regional, and international levels. This specifically means ensuring that the goals of eradicating poverty and "leaving no one behind" guide all institutions, social influencers, public policies, and services provided to the public.

Today, digital government is considered a powerful developmental tool capable of applying all guiding principles for achieving the SDGs, by building societies that uphold peace, justice, and fairness for all. This can only happen through the presence of effective and accountable institutions that respond to everyone's needs. Capacity-building and innovation stimulation will be necessary at all levels—particularly in the fields of ICT and digital governance—to promote policy integration, improve public institutional accountability, and implement digital participation for more inclusive communities. This ensures that public services are delivered equitably and efficiently to all, especially to the poorest and most vulnerable groups (Aquaro, 2024).

Undoubtedly, focusing on digital governance—by encouraging the use of communication technologies and information systems—can enhance economic growth and sustainable development, positively impacting the development of the social environment by enabling humans to control nature and achieve productive efficiency. Sustainable development does not view humans as mere resources, but as ethical beings with the power of innovation and positive participation in utilizing their environment.

The application of digital governance helps consolidate the principles of good governance, which are based on equality, justice, rule of law, and participation. It also contributes to combating financial and administrative corruption, bribery, and other negative social phenomena. Moreover, it improves and simplifies the quality of services provided by allowing access through a single portal, establishing networks and systems connecting various government bodies, and providing the IT infrastructure necessary as a foundational pillar for achieving economic development. This is clearly seen in developed countries that have achieved significant economic growth by adopting digital governance, with Singapore being a prime example of this approach (Sahnouni Mostafa, 2021)

5. Field Study

5.1 Introduction to the Institution Under Study

Condor Company is an Algerian enterprise specialized in the manufacturing of electronic and electrical devices. It is considered one of the leading companies in this field in Algeria and the region. Condor was established in 2002 and operates under the Benhamadi Group. Its share capital is estimated at 4,277,000,000 DZD. In addition to producing a wide range of electronic products, the company also has six productive business units, which are as follows:

- Refrigerator Business Unit
- Cooking Appliances and Metal Processing Business Unit

- Air Conditioning, Heating, and Laundry Business Unit
- Plastic Processing Business Unit
- Polystyrene Business Unit
- Solar Energy and Lighting Business Unit

As of December 31, 2022, the company employs approximately 3,814 workers, including 3,544 males and 270 females, distributed across all of the company's production units according to the needs of each department.

5.2 Study Methodology

In order to cover the various theoretical and practical aspects of the subject, answer the research question, and test the validity of the hypothesis, the researcher relied on the descriptive-analytical approach to address and define the different intellectual and conceptual dimensions related to the study topic. This approach aimed to comprehensively understand the topic and analyze the components on which it is based. For the applied part of the study, a questionnaire was used as the data collection tool, and the data was analyzed statistically using the SPSS software.

5.3 Study Sample

Selecting an appropriate study sample is of great importance in scientific research, especially in terms of its impact on the study and its results, as a well-chosen sample can accurately represent the broader population. The study targeted individuals who are almost permanently present within the company's main units and administrative structures—specifically, experienced and qualified executives and employees with extensive knowledge of information and data related to the company. The focus was placed on this group because they are consistently present within the company's operational environment.

5.4 Study Tool

The present study relied on the questionnaire as the primary tool for collecting the necessary data, specifically designed for this purpose. The questionnaire is considered one of the most suitable and appropriate tools for the nature of this study. It was developed based on several previous Arab and international studies and was divided into the following sections:

- **Section One:** Pertains to the personal data of the sample members, including (gender, age, academic qualification, job position, and years of experience).
- **Section Two:** Pertains to the independent variable of the study, which is the dimensions of digital governance (digital participation, digital transparency, digital accountability, digital auditing).
- **Section Three:** Pertains to the dependent variable of the study, which is the dimensions of sustainable development (economic, social, environmental, and technological dimensions).

The five-point Likert scale guided the formulation of the questions; the scores shown in the following table reflect this distribution:

Table 2. Arithmetic Mean Values and Availability Degree According to the Five-Point Likert Scale

Reference Mean	4.21 – 5	3.41 – 4.20	2.61 – 3.40	1.81 – 2.60	1 – 1.80
Weight	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Evaluation	High		Medium	Low	

Source: Prepared by the researcher based on previous studies.

5.5 Validity and Reliability

5.5.1 Construct Validity

The calculation of the Pearson correlation coefficient among the total score of every dimension inside a section and the total score of the section as a whole, the researcher performed a construct validity test for the study tool. It follows that the questionnaire has great construct validity if the correlation coefficient is strong and statistically significant.

Table 3. Construct Validity Test of the Questionnaire

Correlation Relationship		Correlation Coefficient (r)	Significance Level
Digital Governance Axis	Digital Participation Dimension	0.74	0
	Digital Transparency Dimension	0.75	0
	Digital Accountability Dimension	0.75	0
	Digital Auditing Dimension	0.82	0
Sustainable Development Axis	Economic Dimension	0.92	0
	Social Dimension	0.92	0
	Environmental Dimension	0.93	0

	Technological Dimension	0.94	0

Source: Made by the researcher using SPSS v27 outputs.

From Table (03), it is evident that all correlation coefficients are statistically significant, ranging between 0.74 and 0.94, indicating a strong and positive correlation between the overall Digital Governance section and its four dimensions, as well as between the Sustainable Development section and its four dimensions. Therefore, the questionnaire demonstrates high construct validity and is indeed suitable for measuring what it was designed to measure.

5.5.2 Instrument Reliability

The reliability and stability associated with the measurement—that is, the results the questionnaire should produce when used on the same sample under the same conditions—define its dependability. Using the Cronbach's Alpha coefficient helped one evaluate the dependability of the instrument. This coefficient runs from 0 to 1; the lowest permissible value is 0.7.

Table 4. Cronbach's Alpha Coefficients for Measuring Instrument Reliability

Axis	Number of paragraphs	Reliability (Cronbach's Alpha)
Digital Participation	5	0.913
Digital Transparency	5	0.868
Digital Accountability	5	0.87
Digital Auditing	5	0.896
Axis One: Dimensions of Digital Governance	**20**	**0.923**
Economic Dimension	5	0.941
Social Dimension	5	0.897
Environmental Dimension	5	0.915
Technological Dimension	5	0.953
Axis Two: Dimensions of Sustainable Development	**20**	**0.973**
Total Questionnaire	**40**	**0.955**

Source: Made by the researcher using SPSS v27 outputs.

With Table (04) the Cronbach's Alpha value for the whole questionnaire is 0.955, which is regarded as rather high. Moreover, respectively, the Cronbach's Alpha values for the two main questionnaire sections are 0.923 and 0.973. The Alpha values for the four dimensions of digital governance fell between 0.868 and 0.913; for the four dimensions of sustainable development, the values fell between 0.897 and 0.953.

These findings show that the questionnaire is rather dependable and can be boldly applied in the field of the research.

5.6 Analysis of Sample Characteristics

The characteristics and traits of the study's sample units can be described as follows:

5.6.1 Distribution of Sample Members by Gender Variable:

The following table shows the distribution of the study sample according to gender:

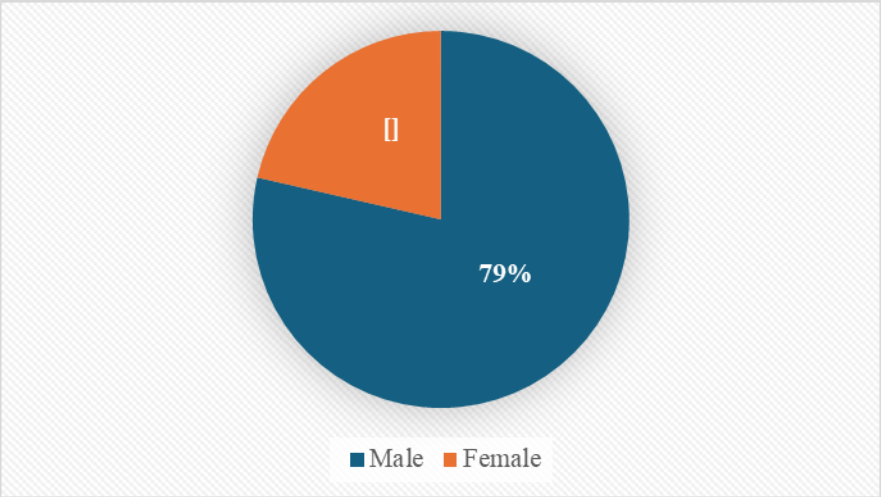
Table 5. Distribution of Study Sample by Gender Variable

Variable	Frequency	Percentage
Male	55	78.60%
Female	15	21.40%
Total	70	100%

Source: Prepared by the student based on SPSS v27 outputs.

The following figure illustrates the distribution of the study sample by gender:

Figure 2. Distribution of Study Sample by Gender Variable



Source: Made by the researcher using company data.

From the above table and figure, it is observed that the majority of the sample consists of males, representing 78.6%, while 21.4% of the sample are females. This indicates a degree of diversity within the study sample.

It also suggests that most workers in the institution under study are male. This can be explained by the nature of the company's activities, which primarily involve the production and assembly of household electrical and electronic appliances. These activities are sometimes physically demanding, involve long working hours, and include technical, service, and professional roles that are generally more suitable for men and require physical effort—unlike roles typically filled by women.

5.6.2 Distribution of Sample Members by Age Variable:

The following table presents the distribution of the study sample according to the age variable:

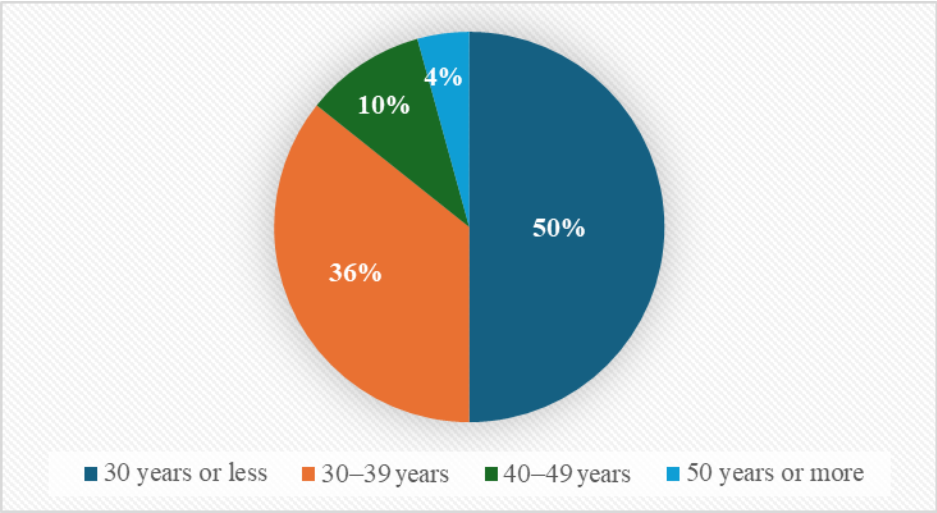
Table 6. Distribution of Study Sample by Age

	Variable	Frequency	Percentage
Age	30 years or less	35	50%
	30–39 years	25	35.70%
	40–49 years	7	10%
	50 years or more	3	4.30%
	Total	70	100%

Source: Prepared by the student based on SPSS v27 outputs.

The following figure shows the distribution of the study sample by age:

Figure 3. Distribution of Study Sample by Age



Source: Made by the researcher using company data.

From the table and figure above, it is observed that the majority of the sample members are under 30 years old, with a representation rate of 50%. This is followed by the age group 30–39 years, representing 35.7% of the sample.

In third place is the 40–49 years age group, with a representation of 10%, and finally, the 50+ years category comes last, with a representation of 4.3%.

This indicates that most employees are young, which reflects the general economic trend of investing in young talent capable of adding value to the institution. The aim is to benefit from dynamic, creative, and development-oriented youth competencies.

These results can also be interpreted to mean that the institution seeks to combine youth with experience, encouraging interaction between different age groups. This approach contributes positively to balanced performance, knowledge transfer, and the formation of a generation capable of taking leadership in the future.

5.6.3 Distribution of Sample Members by Educational Qualification

The following table presents the distribution of the study sample according to the educational qualification variable:

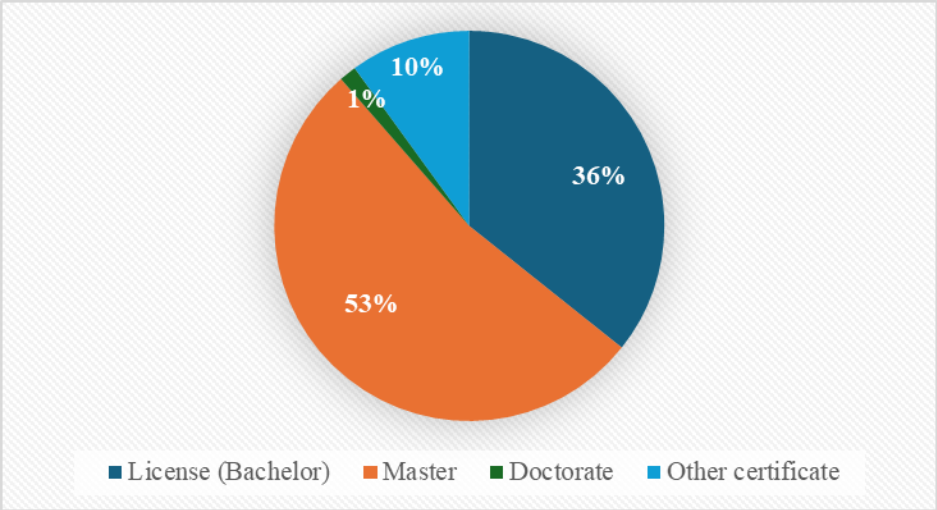
Table 7. Distribution of Study Sample by Educational Qualification

Statement	Variable	Frequency	Percentage
Academic Degree	License (Bachelor)	25	35.71%
	Master	37	52.86%
	Doctorate	1	1.43%
	Other certificate	7	10%
	Total	70	100%

Source: Prepared by the student based on SPSS v27 outputs.

The following figure shows the distribution of the study sample by educational qualification:

Figure 4. Distribution of Study Sample by Educational Qualification



Source: Made by the researcher using company data.

From the above table and figure, we observe that the majority of the sample consists of individuals holding a Master's degree, representing 52.86% of the sample. They are followed by those with a Bachelor's degree (Licence) at 35.71%. At the bottom of the ranking are those with a PhD, representing 1.43%, while 10% of the sample hold other qualifications.

This reflects a recruitment policy focused on attracting and employing university-level talent with high levels of knowledge and strong capabilities for learning and continuous development. This is consistent with the nature of jobs and activities within the company, especially given its strong connection to modern technology and digital transformation.

5.6.4 Distribution of Sample Members by Job Position:

The following table presents the distribution of the study sample according to the job position variable:

Table 8. Distribution of Study Sample by Job Position

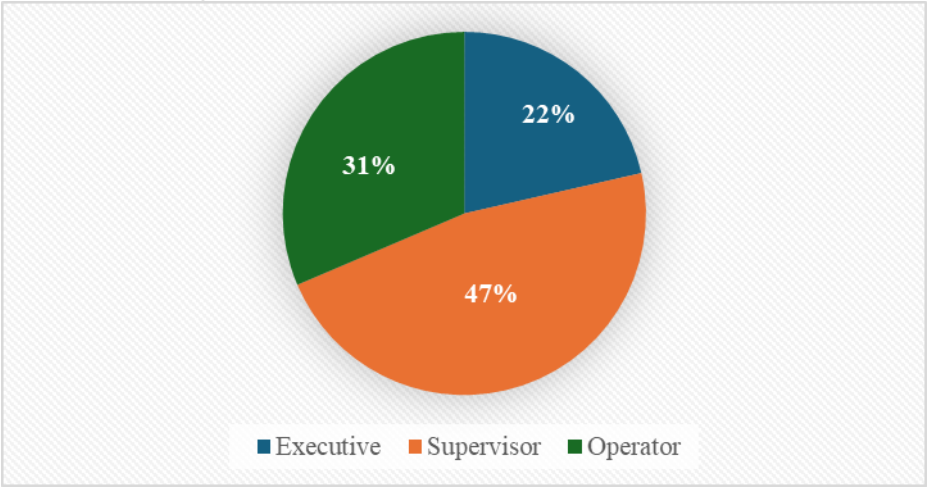
Statement	Variable	Frequency	Percentage
Job Position	Executive	15	21.43%

	Supervisor	33	47.14%
	Operator	22	31.43%
	Total	70	100%

Source: Prepared by the student based on SPSS v27 outputs.

The following figure shows the distribution of the study sample by job position:

Figure 5. Distribution of Study Sample by Job Position



Source: Made by the researcher using company data.

From the table and figure above, it is observed that the majority of the sample consists of skilled support staff (Agents de maîtrise), representing 47.14% of the total. They are followed by operational agents (Agents d'exécution) at 31.43%, and finally, executive-level employees (Cadres) represent 21.43%.

These proportions reflect a balanced organizational structure, where roles and responsibilities are distributed in a manner that supports efficient functioning across various levels of the institution.

5.6.5 Distribution of Sample Members by Professional Experience

The following table presents the distribution of the study sample according to the professional experience variable:

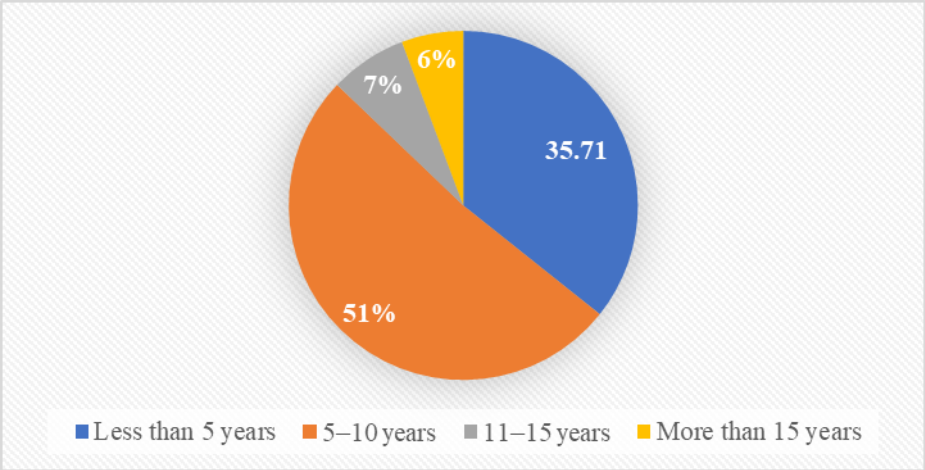
Table 9. Distribution of Study Sample by Professional Experience

Statement	Variable	Frequency	Percentage
Professional Experience	Less than 5 years	25	35.71%
	5–10 years	36	51.43%
	11–15 years	5	7.14%
	More than 15 years	4	5.72%
	Total	70	100%

Source: Prepared by the student based on SPSS v27 outputs.

The following figure shows the distribution of the study sample by professional experience:

Figure 6. Distribution of Study Sample by Professional Experience



Source: Made by the researcher using company data.

From the table and figure above, it is evident that the majority of the sample consists of employees with 5 to 10 years of experience, representing 51.43% of the sample. They are followed by those with less than 5 years of experience, representing 35.71%, then those with 11 to 15 years of experience at 7.14%, and finally, those with more than 15 years of experience, representing 5.72%.

This distribution reflects a healthy mix of varying levels of experience, indicating that the institution values its staff and fosters employment stability. It also demonstrates the employees' responsibility and accumulated experience, which positively impacts the institution's management and operational efficiency.

5.7 Analysis of the Results of the Questionnaire Axis and Dimensions

5.7.1 Analysis of the Results of the Digital Governance Dimensions Axis

The results concerning the dimensions of the digital governance axis are summarized in the table that follows:

Table 10. The Digital Governance Axis Dimensions: Means and Standard Deviations Calculated

Dimension	Mean	Std. Deviation	Direction	Overall Level
Digital Participation	4.07	0.63	Agree	High
Digital Transparency	4.15	0.46	Agree	High
Digital Accountability	3.98	0.55	Agree	High
Digital Auditing	4.14	0.51	Agree	High
Digital Governance Dimensions	4.08	0.46	Agree	High

Source: Made by the researcher using SPSS v27 outputs

Based on the respondents' answers to the axis questions shown in the table above, it was found that the digital governance dimensions axis received an "Agree" rating, with an arithmetic mean of 4.08 and a standard deviation of 0.46.

The four dimensions—digital participation, digital transparency, digital accountability, and digital auditing—also received an "Agree" rating, with arithmetic means of 4.07, 4.15, 3.98, and 4.14, and standard deviations of 0.63, 0.46, 0.55, and 0.51, respectively.

5.7.2 Analysis of the Results of the Sustainable Development Dimensions Axis

The following table presents a summary of the results related to the dimensions of the sustainable development axis:

Table 11. The Sustainable Development Axis Dimensions: Means and Standard Deviations Calculated

Dimension	Mean	Std. Deviation	Direction	Overall Level
Economic Dimension	3.95	0.78	Agree	High
Social Dimension	3.79	0.72	Agree	High
Environmental Dimension	3.71	0.75	Agree	High
Technological Dimension	3.96	0.82	Agree	High
Sustainable Development Dimensions	3.85	0.44	Agree	High

Source: Made by the researcher using SPSS v27 outputs

Based on the respondents' answers shown in Table (11) above, the sustainable development dimensions axis recorded an arithmetic mean of 3.85 with a standard deviation of 0.44, indicating an "Agree" response trend.

The arithmetic mean values for the four sustainable development dimensions—economic, social, environmental, and technological—ranged between 3.71 and 3.96, with standard deviations between 0.72 and 0.82, also reflecting an Agree trend.

This indicates that the targeted sample unanimously agrees on the presence of sustainable development dimensions within the institution.

5.8 Testing the Study Hypotheses

This section involves testing the main hypothesis of the study along with the four sub-hypotheses. It allows us to determine whether these hypotheses can be confirmed or rejected. To analyze the hypotheses, we used the **multiple linear regression model**, which is appropriate for this study. The model is represented as:

$$Yi = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta k Xk + ui$$

Where:

- **Yi** represents the dependent variable
- **X_1...Xk** are the values of the independent variables
- **β_0** is the constant term (representing the minimum value of the dependent variable *Y* when the independent variables are zero)
- **β_1...βk** are the regression coefficients
- **β_1** = the slope of the relationship between Y and X_1
- **ui** is the random error term, representing the difference between the actual values of the dependent variable and the values predicted by the model

The following table shows the outcomes of the multiple linear regression study of the digital governance aspects on the dimensions of sustainable development:

Table 12. Findings from a Multiple Linear Regression Study on Digital Governance Factors Along the SDGs

Dependent Variable: Sustainable Development Dimensions	Independent Variables	R^2	F Value	F Sig.	Regression Coefficients	T Value	T Sig.
	Digital Participation	0.437	5.054	0.01	0.388	2.337	0.023
	Digital Transparency				0.389	2.275	0.026
	Digital Accountability				0.12	0.724	0.471
	Digital Auditing				0.365	2.14	0.036

Source: Made by the researcher using SPSS v27 outputs

From Table (12), we find that the coefficient of determination (R^2) is 0.437, meaning that the effect of the sub-dimensions of digital governance can be ascribed to 43.7% of the variance and explanatory changes in the axis of sustainable development. The remaining percentage results from other factors not included into the study model.

The calculated F-value is 5.054 with a significance level of 0.01, which is less than the threshold of 0.05, confirming the statistical significance of the overall effect.

Additionally, the table shows:

- The significance level for the effect of digital participation on sustainable development is 0.023, which is statistically significant ($p < 0.05$), indicating that it affects the sustainable development axis when considered together with the other explanatory variables.
- The significance level for the effect of digital transparency is 0.026, also statistically significant, indicating a similar effect.
- The significance level for digital accountability is 0.471, which is not statistically significant, meaning it does not significantly influence the sustainable development axis in combination with the other variables.
- The significance level for digital auditing is 0.036, which is statistically significant, indicating that it has an impact on the sustainable development axis along with the other explanatory variables.

Accordingly, the multiple linear regression equation is as follows:

$$Y = 1.828 + 0.388X_2 + 0.389X_3 + 0.365X_4 + 0.643$$

Where:

- **0.643** is the random error (ui)
- **β_0 = 1.828** (the constant value)
- **Y** = Sustainable Development Dimensions
- **X_1** = Digital Participation Dimension
- **X_2** = Digital Transparency Dimension
- **X_3** = Digital Accountability Dimension *(not included in the equation due to insignificance)*

– X_4 = DIGITAL AUDITING DIMENSION

6. Study Results

The main hypothesis states:

"There is no statistically significant effect of the dimensions of digital governance in enhancing the dimensions of sustainable development in the institution under study at a significance level ($\alpha \leq 0.05$)."

Based on the results related to the main hypothesis, which concerns the role of digital governance dimensions in enhancing sustainable development dimensions, it is clear that there is a positive correlation between the digital governance dimensions axis and the sustainable development dimensions axis. Looking at the regression coefficients for digital participation, digital transparency, and digital auditing, with impact coefficients of 0.388, 0.389, and 0.365 respectively, all of which are positive, this indicates a positive linear relationship between the two axes. Any variation in the independent variables will lead to a change in the same direction for the dependent variable. This implies that the institution demonstrates a reasonable level of commitment to implementing digital governance dimensions. The obtained results can be interpreted as follows:

– Digital participation in Condor plays a major role in enhancing the sustainable development dimensions. This refers to involving employees, customers, and the local community in digital processes and decision-making, through the use of tools and techniques such as digital platforms, participatory applications, and accessible electronic communication channels. These tools enable stakeholder interaction and encourage engagement in sustainability initiatives that raise awareness and support environmental and social objectives. This confirms that top management strategically prioritizes digital participation, aligning well with the Sustainable Development Goals (SDGs).

– Commitment to digital transparency can have a direct effect on the institution's reputation, both locally and internationally. Transparent institutions enjoy a better market reputation. This aligns with SDG 16: "Peace, Justice, and Strong Institutions", which supports just, inclusive, and strong institutions. Condor has adopted clear policies and procedures for publishing information transparently, and it utilizes modern and advanced technologies for data management to ensure information credibility and data quality.

– There is an effect of digital auditing in reinforcing the sustainable development dimensions, attributed to a robust digital infrastructure, top management commitment, and employee training in auditing and management control. This dimension contributes to improved operational efficiency, reduced environmental impact, enhanced transparency, compliance, and risk mitigation. Notably, the quality and competence of external auditors and their use of the latest technologies in their duties further strengthen this effect.

– The digital accountability dimension was weak within Condor. This may be due to an organizational culture that does not place significant emphasis on digital accountability, as well as a lack of awareness among employees and management of its importance in achieving sustainable institutional goals. It also indicates the absence of precise indicators to measure digital accountability outcomes and their impact on operations, alongside a lack of clarity in digital responsibility assessment mechanisms.

This was confirmed by the multiple linear regression equation of the four independent variables and their collective influence on the sustainable development dimensions. The effect of digital participation, digital transparency, and digital auditing was individually significant, meaning these variables are capable of influencing sustainable development dimensions alongside other explanatory variables. On the other hand, digital accountability showed no clear individual impact.

6.1 Study Recommendations

– Condor can further enhance digital participation by developing interactive platforms that enable employees, customers, and stakeholders to actively participate in decision-making and idea-sharing.

– Encourage digital creativity and innovation by launching competitions or initiatives that motivate employees to present innovative ideas using digital tools.

– Work on reinforcing a culture of digital accountability within the institution by organizing employee training workshops on the importance of digital accountability and how to apply it in a digital environment. This includes launching internal awareness campaigns and designing effective digital accountability mechanisms.

– Promote open data publishing as a means to enhance transparency, allowing stakeholders to access information related to the company's performance and strategies.

– Invest in developing technologies like artificial intelligence and big data analytics to increase digital efficiency while upgrading the digital infrastructure of the institution to support several digital dimensions.

– Establish strategic partnerships by collaborating with external entities such as universities, research centers, and international organizations to exchange expertise and best practices in digital transformation and sustainable development.

– To ensure the continuity of success, Condor can strengthen digital auditing by continuously investing in technology, training staff, and integrating digital systems. This includes improving data quality and employing advanced technologies to monitor performance and reduce risks.

7. CONCLUSION

Through the study and analysis, it was found that digital governance is a fundamental tool for promoting sustainable development, as it offers opportunities to improve institutional performance, raise transparency levels, and facilitate data-driven decision-making. The results confirmed a strong relationship between several dimensions of digital governance—such as the use of technology to improve services and enhance community partnerships—and achieving sustainable development dimensions. This includes, for example, promoting social justice, improving education quality, and efficiently utilizing natural resources.

Therefore, it can be concluded that achieving sustainable development through digital governance requires an integrated approach that strengthens impactful dimensions and addresses underperforming ones by providing the necessary support in terms of policies, infrastructure, and human resources. Future research is recommended to delve deeper into understanding the limiting factors affecting certain digital governance dimensions and to work on improving them. In doing so, the full potential of digital governance can be harnessed to advance sustainable development toward a more prosperous and resilient future.

Acknowledgment

The authors express their sincere gratitude to Condor Electronics for their cooperation and for facilitating the fieldwork required for this research. Special thanks are also extended to the Governance Horizons Laboratory for Sustainable Local Development and the Laboratory of the Sustainable Economic Institutions Business Management at the University of El Oued and the University Center of Barika for their institutional and academic support. The authors also appreciate the valuable feedback provided by colleagues and peer reviewers, which contributed to the improvement of this study.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

REFERENCES

Journal Articles

1. Al-Ayashi Zarzar. (2015). From local governance to e-governance of local administrations. *Law and Society Journal*, *3*(1), 84–112. Ahmed Draia University, Adrar, Algeria.
2. Haja, A. (2023). The impact of technological development and digital governance techniques on public policy. *Global Politics Journal*, *7*(2), 496–508. Boumerdes University, Algeria.
3. Boufateh, B., & Ketaf, A. (2021). The role of digital governance in achieving sustainable development goals – Case study: Saudi Arabia (2020–2024). *Journal of Intellectual Excellence for Human and Social Sciences*, *Special Issue*, 81–96. El Tarf University, Algeria.
4. Abu Ata, A. A., & Abdel Fattah, A. S. (2023). Digital governance and its role in developing institutional performance in Palestinian universities in the southern governorates. *Arab Universities Union Journal for Higher Education Research*, *43*(1), 46–61. Jordan.
5. Rezouq, S. M., & Al-Idani, E. (2023). The relationship between e-governance and sustainable development – A theoretical approach. *Modern Economy and Sustainable Development Journal*, *6*(1), 100–116. Tissemsilt University, Algeria.
6. Sahnouni, M., & Denbari, L. (2021). E-governance and sustainable development: A conceptual reading. *Journal of Intellectual Excellence for Human and Social Sciences*, *Special Issue*, 269–278. El Tarf University, Algeria.
7. Van der Velden, M. (2018). Digitalisation and the UN sustainable development goals: What rôle for design? *Interaction Design and Architecture(s) Journal*, *37*, 163.

Books

8. Al-Buraidi, A. B. A. (2015). *An integrated approach to sustainable development: Concepts and applications* (1st ed.). Obeikan Publishing.
9. Ismail, A. Y. (2007). *How to analyze governance?* L'Harmattan Publishing.
10. Widloecher, P., & Querne, I. (2009). *The sustainable development guide for enterprises*. Echos Editions, Eyrolles Group.

Thesis or Dissertation

11. Abdelghani, H. (2012–2013). *Legal protection of the environment within the framework of sustainable development* (Doctoral dissertation, Biskra University, Algeria).

Web Sources

12. United Nations. (2024, April 22). *Sustainable Development Goals*. https://www.un.org/sustainabledevelopment/ar/sustainable-development-goals/
13. Aquaro, V. (2024, April 23). *Can digital government accelerate the achievement of the sustainable development goals?* https://dubaipolicyreview.ae/ar/الحكومة-الرقمية-وأهداف-التنمية-المستدامة

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Moral Autonomy, Rational Faith, and Pedagogical Transformation: Reassessing Immanuel Kant's Philosophy of Religion and Education in the Enlightenment Context

Mouloud Akhdar
Dr.
Ziane Achour University of Djelfa
Algeria
E-mail: m.akhdar@univ-djelfa.dz

Issue web link	https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html
Keywords	ant, religion, morality, education, ethics, Enlightenment, philosophy, pedagogy

Abstract

This study provides a comprehensive examination of Immanuel Kant's philosophy of religion and education, with particular attention to his critical distinction between moral religion and historical religion. Kant's claim that authentic religion must be grounded in morality and reason rather than revelation is explored in depth, alongside his argument that the moral law, embedded within human consciousness, serves as the only valid foundation for faith. By rejecting ritualism, ecclesiastical dogmatism, and external authority, Kant reframes religion as an ethical project centered on moral autonomy and rational duty. The paper also investigates Kant's educational philosophy, which he conceives as a lifelong process of cultivating character, freedom, and the capacity for rational self-legislation. Education, for Kant, is both a moral and practical necessity for guiding humanity toward its highest destiny—progress toward enlightenment and moral perfection. The study situates Kant's thought within the broader intellectual currents of the Enlightenment, emphasizing his enduring influence on modern pedagogy, secular ethics, and debates on the relationship between faith and reason. By reassessing the integration of religion and education in Kant's critical system, this article argues that his philosophy remains a cornerstone for understanding the ethical foundations of religious practice and the transformative aims of education. It also highlights the contemporary relevance of Kant's ideas for discussions on moral education, civic responsibility, and the inseparability of ethical life from both individual autonomy and collective progress.

Citation. Akhdar M. (2025). Moral Autonomy, Rational Faith, and Pedagogical Transformation: Reassessing Immanuel Kant's Philosophy of Religion and Education in the Enlightenment Context. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 398–411. https://doi.org/10.56352/sei/8.11.31

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.12.2024	Accepted: 01.05.2025	Published: 01.09.2025 (available online)

Introduction:

Religion is regarded as one of the most significant social realities present in all human societies, as no stage in human history, past or present, has known a community devoid of religion. Religion is a fundamentally human phenomenon, fulfilling psychological and social functions indispensable to both the individual and the collective; moreover, it is essential for the continuity of society. Religion is not limited to worship, integrity, and uprightness but encompasses all that contributes to the realisation of good within society. It functions as one of the forms of social organisation that regulate human relationships with one another, as well as their relationships as individuals with metaphysics. Religious responsibility is inherently individual, a fact that has prompted societies to place great emphasis on religious teachings because they influence personal behaviour and their role in shaping groups and subcultures. Religion is thus considered one of the most crucial components of culture. From this premise, the following question may be posed: What is the relationship between religion and education, particularly within the rational and practical framework of Western civilisation?

1. Nature of Religion

Definitions of religion vary from one philosopher to another, each according to his perspective and field of expertise. This diversity arises from the multifaceted nature of religion: on the one hand, it is connected to both the individual and the community; on the other hand, it is linked to the metaphysical realm, which human reason cannot fully comprehend. The diversity of religious manifestations and forms has led to the proliferation of sects and denominations. Religion is also characterised by a sacred quality that grants it exceptional sanctity, rendering it even more enigmatic and making such matters difficult to address. Consequently, metaphysics has been concerned with determining the veracity of religious beliefs and uncovering their truths, whereas the role assigned to religion within society and its influence on social life in all its dimensions fall within the scope of sociology.[1]

Moreover, any attempt to establish a single definition of religion requires us to approach it as being connected to all aspects of humanity, particularly those related to conduct. For this reason, religion is found in every human society, and its presence in life stems from its distinctiveness, unlike other human concerns, in that it is innate, as indicated in the Qurʾānic verse: "So set your face towards religion, inclining to truth. [Adhere to] the nature of God according to which He has created people. Let there be no change in the creation of God. That is the correct religion, but most of the people do not know" (Qurʾān 30:30, Saheeh International). Here, "the nature of God according to which He has created people" refers to that innate awareness, springing from the depths of the soul, that this existence has one God who has control over all things and, by His will, ordains all matter.[2]

This is what we also find in Western thought, particularly with René Descartes, who believed that the human self is marked by deficiency, as evidenced by its awareness of a perfect Being, namely, God. A definition from *Larousse* states, "The religious instinct is shared among all human races, even among those most primitive and closest to animal life. Interest in the divine, or perhaps in what transcends nature, is one of humanity's eternal universal tendencies. This instinct does not vanish; it weakens or fades only in periods of excessive civilisation and then only in a very small number of individuals."[3]

Gustave Le Bon states, "Thanks to beliefs, which sometimes destroy yet more often create, nations and the foundations of true civilisation are established. Without these beliefs, nations cannot survive. From strong belief is born an unshakable conviction, and from such conviction stem the most significant events."[4]

---

[1] Ḥusayn ʿAbd al-Ḥamīd Aḥmad Rashwān, *al-Dīn wa-l-Mujtamaʿ: Dirāsa fī ʿIlm al-Ijtimāʿ al-Dīnī* [*Religion and Society: A Study in the Sociology of Religion*] (Alexandria: Markaz al-Iskandariyya lil-Kitāb, 2004), 3.
[2] Ibid., 400.
[3] *Larousse*, Paris, vol. 5, 997.
[4] Gustave Le Bon, *al-Ārāʾ wa-l-Muʿtaqadāt* [*Opinions and Beliefs*], 145, cited in: Sulaymān al-Khaṭīb, *Usus Maʿlūm al-Ḥaḍāra fī al-Islām* [*Foundations of the Concept of Civilisation in Islam*], 73.

In view of the diversity and variety of definitions of religion, we have chosen to classify them into three categories:[5]

1. **Definitions Based on Inner Contemplation of Religious Sentiment**

   Among the leading figures of this approach is Herbert Spencer, who said of religion: "It is a sense that we are floating in a sea of mysteries and a belief in a power whose temporal and spatial limits cannot be conceived."

   Max Müller considered religion "an attempt to express the inexpressible and to conceive the inconceivable; it is our awareness of the infinite, our love of God, and our longing for Him as absolute perfection."

   Friedrich Schleiermacher stated that religion is "our sense of absolute need and dependence, and our submission to a Being higher than ourselves."

2. **Definitions Based on Intuition**

   For example, Immanuel Kant defined religion as "the recognition of all our duties as divine commands." Henri Bergson, on the other hand, viewed religion as "a defensive reaction initiated by nature against the dangers that intelligence might introduce disintegration for the individual and dissolution for society."[6]

3. **The Third Category: Definitions Based primarily on Objectivity**

   This category reflects a positivist approach to religion. Proponents of these theories rely on comparative analysis between different religions, ancient and modern, primitive and advanced, living and extinct. We also find that Blaise Pascal (1623–1662) rejected arguments that are detached from the world concerning the existence of God. He considered religion the essential force binding individuals together, regulating their relationships, guiding their conduct, and serving as an effective means of distinguishing between human error and truth, a role he saw embodied in Christianity.[7]

Baruch Spinoza affirmed that religion is one of the necessities of society.

Auguste Comte (1798–1857) held that his "positivist religion" should realise its central principle of universal brotherhood and promote love. Religion, for him, is the instrument through which this love is achieved, and harmony between heart and mind is established. Thus, the mission of religion is to create both spiritual and material bonds among human beings under the motto "Live for others," as a means to overcome individual selfishness and attain an ideal social life.[8]

3. Linguistic definition of religion

Among the linguistic definitions, we refer to that of al-Rāzī, who wrote:

---

[5] Ḥusayn ʿAbd al-Ḥamīd Aḥmad Rashwān, *al-Dīn wa-l-Mujtamaʿ: Dirāsa fī ʿIlm al-Ijtimāʿ al-Dīnī* [*Religion and Society: A Study in the Sociology of Religion*], 8–10.
[6] Ibid., 10.
[7] Ḥusayn ʿAbd al-Ḥamīd Aḥmad Rashwān, *al-Dīn wa-l-Mujtamaʿ: Dirāsa fī ʿIlm al-Ijtimāʿ al-Dīnī* [*Religion and Society: A Study in the Sociology of Religion*], ibid., 12.
[8] Ibid., 13.

"*Tadāyanū*: to engage in transactions on credit; *ista dāna*: to borrow. *Dāyantu fulānan* means I dealt with him, giving him a loan and receiving a loan from him. *Al-dīn* (with kasra) signifies custom, practice, and status. *Dānahu—yadīnu-hu* (with kasra) means that he subdued him and enslaved him, so he became *dān*. In the ḥadīth: *Al-kayyis man dāna nafsahu wa-ʿamila limā baʿda al-mawt* ('The intelligent one is he who subdues his soul and works for what comes after death'). *Al-dīn* also denotes recompense and reward. One says: *dāna yadīnu-hu dīnan* ('he recompensed him'), as in the saying, *kamā tadīn tudān* ('as you deal, so you will be dealt with; as you act, so you will be treated'). In addition, in the verse of the Qurʾān: *A-innā la-madīnun* ('Will we indeed be brought to account?') [Q 37:53], meaning 'We shall certainly be recompensed and held accountable.' From this comes *al-dayyān* as an epithet of God Most High; *al-madīn* meaning 'the servant'; *al-madīna* ('city') for a people subdued by labour, as if governed by authority. *Dānahu* means 'he owned him'; it is said that, from this root, the word *madīna* ('city') is derived. *Al-dīn* also signifies obedience: one says, *dāna lahu yadīnu dīnan*, meaning 'he obeyed him,' and *dayyanahu tadyīnan* ('he entrusted him to his judgement')."[9]

We find numerous meanings for the word "dīn," each of which varies according to its context in speech, ranging from recompense to obedience and other nuances. Ibn Manẓūr, in *Lisān al-ʿArab*, offers further meaning, which may be summarised as follows:

"*Dīn*: *al-Dayyān* is one of the Names of God, Mighty and Majestic, meaning Judge or Arbiter. Some of the early generations, when asked about ʿAlī ibn Abī Ṭālib (peace be upon him), said: *He was the Dayyān of this community after its Prophet*, that is, its judge and ruler. *Al-Dayyān* also means the Subduer, as in the verse by Dhū al-Iṣbaʿ al-ʿAdwānī:

'You, son of ʿUmuk, have gained no precedence in lineage over us, nor are you my Dayyān to subdue me!' meaning: you are not my conqueror, to govern my affairs. *Al-Dayyān* thus signifies God, Mighty and Majestic, the Subduer, Judge, and Arbiter. It is derived from *dāna al-nās*, meaning 'he compelled them to obedience.' One says: *danatuhum fa-dānū* 'I subdued them, so they obeyed.'

Al-Aʿshā al-Ḥaramzī addressed the Prophet (peace and blessings be upon him) in verse:

'O Master of Mankind and Dayyān of the Arabs.'

In a report of Abū Ṭālib, the Prophet (peace be upon him) is quoted as saying: *'I want from Quraysh a word by which the Arabs will tadīn (submit) to them'*, meaning to obey and yield to them.[10]

Dīn also denotes the state or condition. Ibn Sallām said: *Al-dīn al-ḥāl*—'dīn is condition.' An Arab said: *'If you saw me in a dīn other than this,'* meaning 'in a condition other than this.' Thus, *dīn* signifies circumstance and condition, possibly because religion is a purely human affair and a uniquely human state. Religion is a social system; animals have no religion because they lack this system and, as Hegel observed, they cannot rise above the level of sensation to that of thought, nor ascend through reason to the Absolute."

From an Islamic perspective, the statement that animals are "without religion" does not mean that they are devoid of faith, for the Qurʾān states: "And there is not a thing except that it exalts Him with His praise, but you do not understand their way of exalting" (Q 17:44, Saheeh International). Religion is a human concern because prophets are human**;** however, according to the Qurʾān, religion is also addressed to the jinn.[11]

[9] al-Rāzī, *Mukhtār al-Ṣiḥāḥ* [*Selected Lexicon of al-Ṣiḥāḥ*], 91.
[10] Ibn Manẓūr, *Lisān al-ʿArab* [*The Tongue of the Arabs*], vol. 13 (Beirut, Lebanon: Dār Ṣādir), 166–167.
[11] al-Khashshat, Muḥammad ʿUthmān. *Madkhal ilā Falsafat al-Dīn* [*Introduction to the Philosophy of Religion*] (Cairo, Egypt: Dār Qibāʾ li-l-Ṭibāʿa wa-l-Nashr wa-l-Tawzīʿ, 2001), 12.

Thus, religion depicts the human condition within its social framework and clarifies one's status as shaped by faith and religious observance. This quality is what distinguishes humankind from all other creatures.

Al-Jurjānī held that *sharīʿa* (divine law) is called *dīn* insofar as it is obeyed:

"*For the sharīʿa, insofar as it is obeyed, is called dīn; and insofar as it gathers people together, it is called milla (community of faith).*"[12]

The *philosophical dictionary* of Jamil Ṣalībā, in its linguistic treatment of religion, does not depart from what we have outlined above:

"*In Arabic, dīn signifies custom, condition, way of life, policy, opinion, judgement, obedience, and recompense as in the Qurʾānic verse Mālik yawmi al-dīn ('Master of the Day of Recompense,' Q 1:4) and in the proverb kamā tadīn tudān ('As you deal, so will you be dealt with').*"[13]

Referring to André Lalande's *Vocabulaire technique et critique de la philosophie*, we find that the etymology of the word *religion* has been widely debated. Most classical authors (Lactantius, Augustine, Servius) derive it from *religare* ("to bind"), seeing in it the idea of connection, whether the bond of obligation toward certain practices, the bond uniting people to one another, or the bond between humans and deities. Cicero, on the other hand, derives it from *relegere*, meaning "to go over again with care," from *revoir avec soin*. The Latin *religia* initially expressed a feeling of fear and conscientious regard for duty toward the gods. Among the ancients, there was no singular term *religia*; instead, they spoke of *religiones*, denoting "forms of worship." The singular term later came to designate "religion" in general. Thus, the word expresses three principal ideas:[14]

1. The Concept Encompasses:

1. The idea of affirming a theoretical doctrine or a set of intellectual convictions.
2. The idea of a collection of ritual acts of worship.
3. The idea of a direct and spiritual relationship between the human soul and God.

The Terminological Definition of Religion

Religion has been defined in numerous ways within the scholarly literature, including in dictionaries, works of Arabic linguistics, and Islamic writings. Among these is the definition offered by Jamil Ṣalībā in his *Dictionary*:

"Religion, according to our ancient philosophers, is a divine ordinance guiding rational beings towards goodness. The distinction between *dīn*, *milla*, and *madhhab* is as follows: *sharīʿa* (divine law), insofar as it is obeyed, is called *dīn*; insofar as it unites, it is called *milla* (faith community); and insofar as it is a reference point, it is called *madhhab* (school of thought). Another view holds that *dīn* is attributed to God Most High, *milla* to the Prophet, and *madhhab* to the jurist, although these terms are often used interchangeably. Thus, it has been said that they are essentially one but differ in consideration. The term *dīn* is applied to the divine law or the *summa* that is what God has legislated for His servants in terms of laws and ordinances."[15]

---

[12] al-Jurjānī. *al-Taʿrīfāt* [*Definitions*], 1st ed. (Egypt: al-Maṭbaʿa al-Khayriyya, 1306 AH), 47.
[13] Ṣalībā, Jamil. *al-Muʿjam al-Falsafī* [*The Philosophical Dictionary*], vol. 1 (Beirut, Lebanon: Dār al-Kitāb al-Lubnānī, 1982), 572.
[14] Lalande, André. *Mawsūʿat Lālānd al-Falsafiyya* [*Lalande's Philosophical Encyclopaedia*]. Translated by Khalīl Aḥmad Khalīl. Vol. 1. 2nd ed. Beirut–Paris: Manšūrāt ʿAwīdāt, 2001, 1204.
[15] Ṣalībā, Jamil. *al-Muʿjam al-Falsafī* [*The Philosophical Dictionary*], vol. 1, 572.

Alternatively, it is a divine ordinance that calls upon rational beings to accept what has been brought by the Messenger; or it is a divine decree guiding those endowed with reason, through their own choice, towards goodness in itself; or it is God's true religion, free from doubt, veil, or deviation a disclosure by the Almighty to His servant of His manifest sovereignty, evident in and over all creation, and of His hidden majesty, which no name can fully denote nor form encompass, yet which is the source of all existence.[16]

These definitions converge in articulating the concept of religion, as agreed upon by many scholars concerned with this subject, who concluded that it is a divine ordinance guiding the attainment of goodness. The pursuit of goodness is an essential human aspiration that is sought for the sake of happiness, and it inclines humanity toward peace, tranquillity, and both spiritual and physical well-being, which humans strive and struggle to achieve. Religion, as a heavenly gift for the service of humankind, necessarily fulfils this purpose.

2. Kant's Philosophy of Religion

Kant distinguishes between two kinds of religion: moral religion, which he regards as the one true faith grounded solely in morality, and historical religion (the revealed religion). He discusses historical religion only in relation to moral religion, which is based entirely on pure reason in its practical use. Its laws are a priori independent of any empirical reality or historical events. The person governed by this moral law and moved by it believes in a single God without the need for revelation or proof.

Historical religion, by contrast, is founded upon a transcendent form of knowledge, namely, divine revelation. In this framework, morality is the result rather than the foundation. Kant views all forms of historical religion as having their origins in prophets, who served as the first teachers. Instruction in historical religion does not rest on the concepts and notions of pure reason but rather on knowledge of historical facts, such as revelation and miracles. All historical faith presupposes revelation, and its dissemination depends on the confirmation of its truth. Thus, its legitimate method is rooted in tradition and transmission, whose purpose is to preserve the miracle of revelation and to perpetuate it as sacred commandments taught to humankind so that they become established instructions for every generation.

This faith is therefore grounded in external revelation and requires teachers. Historical faith is a taught faith, wherein religion is presented as dogmatic beliefs accepted through faith rather than subjected to reason, with each belief being offered as a truth taught to all people of every age. To ensure the continuity of revelation as a sacred command for humankind, revelation was accompanied from the outset by miracles. Historical faith holds that evil resides in the human heart and that no one is entirely free from it.[17]

Kant holds that this historical faith lies at the root of the fragmentation of humanity's unity, as competing and conflicting forms of belief view one another as being in error. From this arises conflict, which tears apart the bonds of human unity and strikes at the very foundations of global peace and security. Nevertheless, Kant acknowledges certain advantages to tradition and transmission, such as the promotion of language education, resilience in the face of major anti-religious revolutions, and the preservation of religious continuity.

In historical faith, commitment is characterised by mere compliance and passive obedience to divine revelation. People in this form of belief relate to God as although He was an earthly ruler demanding service and obedience, failing to recognise that in fulfilling their duties toward others, they are also carrying out God's commands. As a result, religion comes to be understood primarily as divine worship rather than as a pure moral obligation. Historical faith is thus a faith of worship, which cannot be regarded as salvific or redemptive because it is not moral faith; it is not grounded in a genuine disposition of the heart but rather in the assumption of divine favour

---

[16] al-Khashshat, Muḥammad ʿUthmān. *Madkhal ilā Falsafat al-Dīn* [*Introduction to the Philosophy of Religion*], 14.
[17] Ghīdān, al-Sayyid ʿAlī. "Falsafat al-Dīn ʿinda Kant" ["The Philosophy of Religion in Kant"]. *Majallat al-Rāṣid al-ʿIlmī* [*The Scientific Observer Journal*], no. 3. Beni Suef University, Egypt, (2016), 81.

through worship. Such worship, in and of itself, lacks moral value and instead immerses people in a flood of empty rituals that foster fanaticism among nations, leading them to commit massacres and killings under the illusion of fulfilling a sacred duty and placing them in a state of perpetual hostility toward all other people.[18]

Kant firmly rejects this, for in his view, morality is the very foundation of religion, and revelation holds no epistemic status.[19] He thus set revelation aside and excluded it, not by denying the existence of God but by making God a moral postulate within the *Metaphysics of Morals*, which serves as the basis for pure rational religion.

According to Kant, morality rests upon three postulates:[20]

1. The existence of God.
2. The immortality of the soul.
3. The freedom of the will.

For Kant, rational religion is a moral religion that is entirely distinct from historical religions in general and from Judaism and Christianity in particular, which he considered borrowed garments for it. Rational religion is grounded in morality, and morality, in turn, rests on reason, unlike Christianity, a positive historical religion that grounds morality in the Kingdom of God.

Thus, pure rational religion is not something that precedes morality or merely supports it; rather, it is a religion founded upon reason, for it is grounded in morality, and morality itself is founded on reason, so it is built solely upon reason.

This understanding of religion overturns the prevailing conception of historical religions, which place absolute certainty in religious symbols. Such certainty, Kant argues, is unwarranted because the knowledge implied by these symbols transcends sensory perception and therefore cannot be possessed. Hence, the three postulates are not theoretical knowledge that can be demonstrated, in contrast to revelation, which aims to provide proofs. Instead, they are beliefs within pure rational religion that give meaning to ideas that theoretical pure reason can conceive but not prove.

These beliefs are therefore legitimate despite their lack of certainty. Moreover, they are not purely individual or subjective convictions, for reason itself has posited them as ideally suited to the human condition. Kant further argues that if we possessed complete theoretical certainty about God and immortality, it would be impossible to reject these ideas by an act of will; our morality would then be purely mechanical, reducing us to marionettes whose strings are pulled by fear and desire.[21]

Since, for Kant, moral action is not tied to its external outcomes, nor does it derive its worth from any pleasure sought, whether sensory or intellectual or from the pursuit of utility, whether private or public, its value lies solely in its being performed by the agent out of a sense of rational duty for its own sake. In emphasising this point, Kant denies true goodness to anything other than the good will, which he deems the necessary condition for an action to be moral. An action is good only if accompanied by goodwill, which is also an indispensable condition for a person to be worthy of happiness.[22]

[18] Ghīdān, al-Sayyid ʿAlī. *Falsafat al-Dīn ʿinda Kant* [*The Philosophy of Religion in Kant*], 82.
[19] Ibid., 81.
[20] al-Khashshat, Muḥammad ʿUthmān. *Madkhal ilā Falsafat al-Dīn* [*Introduction to the Philosophy of Religion*], 23.
[21] al-Khashshat, Muḥammad ʿUthmān. *Madkhal ilā Falsafat al-Dīn* [*Introduction to the Philosophy of Religion*], 24.
[22] Ghīdān, al-Sayyid ʿAlī. *Falsafat al-Dīn ʿinda Kant* [*The Philosophy of Religion in Kant*], 85.

Here, Kant transcends all prevailing religious notions of goodness, moral action, and reward or punishment, which he considers to be without intrinsic value, since goodness is understood as action arising from a good will bound by duty, its meaning shaped by reason alone.

The connection between religion and morality in Kant's philosophy is most clearly demonstrated in the postulate of God's existence, which he considers indispensable. This postulate is bound to the idea of human moral striving: our effort in the moral domain compels us to conceive of a perfect, benevolent being in whom all virtues are complete and who is capable of granting happiness to those who strive morally. God, therefore, is the ultimate guarantor of happiness and the end of moral action.

Thus, Kant underscores the profound relationship between morality and religion: morality necessarily leads to religion, pointing to a moral lawgiver beyond humanity itself, conceived as its ultimate end. He does not deny the moral depth of religion; without morality, religion has no value. In this way, reflection on pure morality culminates in the recognition of an active principle of God.[23]

Morality, in essence as Kant himself affirms, is the individual's submission to the universal and the belief that obedience to the universal is the highest form of freedom and supreme power. Thus, morality from its very inception contains a religious element.

Accordingly, Kant defined religion in moral terms, stating:

"Religion is the recognition of all our duties as divine commands. The religion in which I must first know something to be a divine command before acknowledging it as my duty...."[24]

For Kant, religion is present from the very beginning and at every stage of moral reasoning. The enlightenment in Germany, however, was less audacious than that in France. Although philosophers of both countries relied upon reason and refused to submit to any authority other than their own sovereignty, German thinkers were closer to acceptance than rejection. Humanity, nature, and God were regarded as almost one: God was seen as the final purpose in nature and as the author of moral law. This perspective can be discerned not only in Kant but also in Johann Gottfried Herder and Gotthold Ephraim Lessing, who, alongside Kant, represent the three pillars of German enlightenment philosophy.

In France, by contrast, Enlightenment thought was marked more by rejection than acceptance; reason there leaned more toward analysis than justification. Thus, a careful researcher will find that the problem of religion was deeply present throughout all stages of Kant's intellectual development before, during, and after the critical period. Religion was a guiding force for Kant, despite his evident engagement with modern science and his meticulous study of its development. Kant began his intellectual journey as a scientist rather than a philosopher. When he turned to philosophy, he did so from a scientific background heavily influenced by natural science and Newtonian mechanics, a context that shaped his philosophical inquiry through constant interaction with it.[25]

3. The concept of education

3.1. The Definition of Education: Linguistic and Terminological

[23] Ibid., 85.
[24] Kant, Immanuel. *al-Dīn fī Ḥudūd Mujarrad al-ʿAql* [*Religion within the Limits of Reason Alone*]. Translated by Fatḥī al-Miskīnī. 1st ed. Beirut, Lebanon: Jadāwil li-l-Nashr wa-l-Tawzīʿ, (2012), 243–244.
[25] Ghīdān, al-Sayyid ʿAlī. *Falsafat al-Dīn ʿinda Kant* [*The Philosophy of Religion in Kant*], 86.

Returning to the classical Arabic lexicons, we find that the word *tarbiya* (education/upbringing) is derived from three linguistic roots:[26]

1. **First Root:** *Rabā–yarbū* (to increase, to grow), as in the Qurʾānic verse:

   "And whatever you give in usury to increase within the wealth of people will not increase with God" (Q 30:39).

2. **Second Root:** *Rabī–yurbī* (patterned like *khalfī–yukhfī*), meaning "to be raised or brought up."

3. Ibn al-Aʿrābī said:

   فمن يكن سائلًا عني فإني ********** بمكة منزلي وبها ربيتُ

   English translation

   *So whoever asks about me, I am, indeed, ********** In Mecca is my home, and there I was raised.*

4. **Third Root:** *Rabba–yarubbu* (patterned like *madda–yamuddu*), meaning "to nurture, guide, govern, care for, and manage affairs."

5. Ḥassān ibn Thābit, as cited in *Lisān al-ʿArab*, said:

   ولأنت أحسن إذ برزت لنا********** ********* يوم الخروج بساحة القصر

   من درة بيضاء صافية ********* ********* مما تربب حائر البحر

   English translation

*And you were the most beautiful when you appeared to us ********** On the day you came forth to the courtyard of the palace, like a pure white pearl ********* Nurtured in the depths of the sea's basin.*

In summary, the linguistic concept of *tarbiya* encompasses growth, upbringing, and correction. These meanings complement one another, forming a comprehensive understanding of education as a process of fostering development, nurturing character, and guiding moral and intellectual refinement.

3.2. The Terminological Definition of Education[27]

The definition of *tarbiya* (education) in terminology varies according to the philosophical foundations adopted by human societies in training their generations, instilling their values and beliefs, and shaping their understanding of the educational process, its methods, and its tools.

Some Western scholars have defined education as follows:

[26] al-Muqahwī, Mawza Zayd ʿAbd Allāh. "Mafhūm al-Tarbiyya al-Islāmiyya" ["The Concept of Islamic Education"]. *Majallat al-Dirāsāt al-ʿArabiyya* [*Journal of Arab Studies*], Minya University–Kuwait, n.d., 528.
[27] Ibid., 529.

- **Plato:** Education aims to provide the body and soul with all possible beauty and perfection.
- **Aristotle:** Education is the preparation of the mind to acquire knowledge, just as the earth is prepared for plants and crops.
- **Herbert Spencer:** Education involves preparing human beings to live a complete life.
- **John Dewey:** Education is life itself, not merely preparation for life.

Among Muslim scholars:

- **Ibn Sīnā (Avicenna):** Education is *ʿāda* (habit), meaning the repeated practice of an action.
- **Ibn Khaldūn:** Education is a process of social upbringing that accustoms the individual to the customs and values prevailing in society while imparting existing knowledge and information.

Contemporary educators also differ in defining education:

- Education is a deliberate or spontaneous process shaped by a society's culture to nurture new generations, equipping them with awareness of their roles and responsibilities.
- It is the set of experiences through which a learner develops intellectual, innate, perceptual, emotional, social, and motor capacities, acquiring the knowledge and skills needed to face life and adapt to it.
- Education is a process of socialisation and acculturation, enabling full participation in society. Under specific conditions, political systems, governing structures, and firmly held beliefs, education becomes a means of shaping and refining individuals.

In general, education is a comprehensive process that addresses all dimensions of human existence: psychological, intellectual, emotional, personal, behavioural, cognitive, and social. It shapes an individual's way of thinking, approach to life, and interactions with others, occurring in the home, the school, and every environment. Education embodies individual, social, and ideal concepts, reflecting the full development of the human being.

3.3. Education in the Individual Sense[28]

Education, in its individual sense, is the preparation of a person for future life. It equips the individual to face the natural world, uncovers a child's innate abilities and talents, and works to nurture, develop, and strengthen them.

This stage, known as childhood, cannot flourish without a supportive environment and sound, guided education beginning within the family under the care of parents who pass on their cultural and educational heritage. Here, the child receives their earliest upbringing. Parents, mothers and fathers alike, as well as teachers, bear responsibility for educating children, shaping their character, and preparing them for life.

Psychologists have focused on child development, its stages, contributing factors, and age-specific characteristics, as well as individual differences. They have also demonstrated that children have essential needs that must be fulfilled to ensure healthy growth:

[28] al-Muqahwī, Mawza Zayd ʿAbd Allāh. "Mafhūm al-Tarbiyya al-Islāmiyya" ["The Concept of Islamic Education"], 530.

- Cognitive and intellectual development needs
- Physical and motor development needs
- Social and moral development needs
- Emotional and psychological development needs

4. The Relationship between Religion and Education from Kant's Perspective

Kant saw humanity's most significant task as learning how to occupy its place in creation with dignity and to understand what it truly means to be human. In the preface to his *Lectures on Pedagogy*, he writes that a human being can become truly human only through education; education forms a person, and its ultimate goal is the cultivation of character, developing a being who acts freely and preserves their own moral integrity.

Kant adds that divine providence has willed that humanity must bring forth goodness from within itself. Providence says to humankind: *Strive in the world; I have endowed you with all the capacities for goodness, and it is your duty to cultivate them. Your happiness or misery depends upon yourself.* Thus, divine providence has not bestowed goodness or evil upon humanity but rather the capacity for goodness and its development.

He further observes that within humanity, there are numerous latent seeds of virtue; our task is to cultivate these seeds in harmony with our natural capacities, to mature humanity beginning from these origins, and to work so that the human being may attain their destiny. Animals instinctively fulfil their destinies without knowledge; only human beings must actively strive to realise their purpose. This, however, is impossible unless a person possesses a clear conception of their ultimate destiny.[29]

Kant believed that education is an art that requires continual refinement through the efforts of successive generations. Each generation, having learned from its predecessors, becomes more capable of providing an education that develops all the natural capacities of humanity, ultimately guiding the entire human race toward its destiny.

He divides education into two main components: discipline (training) and enlightenment (instruction and moral formation).

4.1. Aims of Education According to Kant

- **Discipline (al-tahdhīb):** Cultivating self-control and curbing one's instincts to prepare a person for life in society.
- **Culture (al-taṯqīf):** Equipping individuals with intellectual, artistic, and practical knowledge that allows them to thrive.
- **Acquisition of prudence (ḥuṣūl al-fiṭna):** Developing wisdom and the capacity to act thoughtfully.
- **Moral Formation (takwīn al-akhlāq):** Building characters on the basis of moral law.

4.2. Types of Education According to Kant[30]

[29] Badawī, ʿAbd al-Raḥmān. *Falsafat al-Dīn wa-l-Tarbiyya ʿinda Kant* [*The Philosophy of Religion and Education in Kant*]. 1st ed. Beirut, Lebanon: al-Muʾassasa al-ʿArabiyya li-l-Dirāsāt wa-l-Nashr, 1980, 121.
[30] Ibid., 123.

1. **Physical Education**

2. a. *Education of the body:* Training the body to develop strength, health, and resilience.

3. b. *Intellectual education:* Cultivating cognitive abilities and mental discipline.

4. **Moral Education**

5. Moral education is, in Kant's view, the core element of human formation. He regarded humanity's ultimate goal as moral perfection. A person should perform good actions because they are good and fulfil their duties because they are duties. This imperative is absolute and not conditional upon circumstances or rewards.

   Moral education, therefore, must be founded on moral principles rather than mere discipline. Discipline prevents only faults, whereas moral education shapes a way of thinking. The goal is to accustom children to act according to moral laws, not out of external motives or fear of punishment. Discipline tends to become a habit that may fade over time, whereas an understanding of moral principles allows individuals to internalise and uphold justice.

   Since grasping these principles is not easy for children, parents and teachers play a crucial role in enlightening and guiding them toward moral reasoning, helping them cultivate morality from within.[31]

Kant affirms that religion is the moral law within us, insofar as it derives its authority over us from a legislature and sovereign; it is morality applied to the knowledge of God. If religion is not bound to morality, it becomes nothing more than a quest for blessings. Hymns, prayers, and attendance at church services should serve to inspire a person with renewed strength and courage to reform themselves; otherwise, they are only expressions of a heart imbued with a sense of duty. Such acts are not good deeds in themselves but merely preparations for good deeds. A person can be pleasing to the Supreme Being only by becoming a better human being.[32]

In Kant's view, religious practices and rituals do not themselves create morality; rather, their only proper function is to provide renewed energy for moral self-improvement. Vice is evil because it is evil in itself, not because God has forbidden it. A child feels within themselves a law, moral law, which must be strengthened, clarified, and affirmed in their soul. In Kant's eyes, a person is worthy of contempt when corrupt, and this contempt stems from within the moral consciousness of humanity itself, not merely because God has forbidden wrongdoing.

It is not necessary, Kant argues, for the legislator to be the creator of the law. A ruler, for example, may prohibit theft in their country, but this does not make them the creator of that prohibition. In this way, one learns that righteous conduct is the only path to being worthy of happiness, and this morality must appear as a natural law, not an arbitrary command. Thus, religion is inseparably embedded in the entirety of morality.[33]

Conclusion

A religion founded solely upon theology can never encompass true morality, for such a faith produces only fear on the one hand and, on the other hand, intentions and schemes driven by the expectation of reward, resulting merely in superstitious worship. Morality must therefore come first, followed by theology; this, according to Kant, is what constitutes religion. Moral instruction must precede religious instruction.

[31] Badawī, ʿAbd al-Raḥmān. *Falsafat al-Dīn wa-l-Tarbiyya ʿinda Kant* [*The Philosophy of Religion and Education in Kant*], 144.
[32] Ibid., 145.
[33] Ibid., 145.

In conclusion, the relationship between religion and education is one of harmony and complementarity: in the Islamic world, religion contains all the elements of both individual and social education, whereas in the Western world, both religion and education share the same aim: the establishment of universal human morality.

Acknowledgement

The author expresses sincere gratitude to the Faculty of Humanities and Social Sciences at Ziane Achour University of Djelfa for their academic support and intellectual environment that encouraged the development of this study. Special thanks are extended to colleagues in philosophy and religious studies who provided valuable insights during seminar discussions, which significantly contributed to the refinement of this paper.

Conflict of Interest

The author declares no conflict of interest. This research was conducted independently and received no specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

1. Kant, I. (2012). Religion fī ḥudūd mujarrad al-ʿaql [Religion within the limits of reason alone] (F. al-Miskīnī, Trans.; 1st ed.). Beirut, Lebanon: Jadāwil li-l-Nashr wa-l-Tawzīʿ.
2. Rashwān, Ḥ. ʿA. A. (2004). al-Dīn wa-l-mujtamaʿ: Dirāsa fī ʿilm al-ijtimāʿ al-dīnī [Religion and society: A study in the sociology of religion]. Alexandria, Egypt: Markaz al-Iskandariyya lil-Kitāb.
3. Le Bon, G. (n.d.). al-Ārāʾ wa-l-muʿtaqadāt [Opinions and beliefs].
4. al-Rāzī. (n.d.). Mukhtār al-ṣihāḥ [Selected lexicon of al-Ṣiḥāḥ].
5. Ibn Manẓūr. (n.d.). Lisān al-ʿarab [The tongue of the Arabs] (Vol. 13). Beirut, Lebanon: Dār Ṣādir.
6. al-Khashshat, M. ʿU. (2001). Madkhal ilā falsafat al-dīn [Introduction to the philosophy of religion]. Cairo, Egypt: Dār Qibāʾ li-l-Ṭibāʿa wa-l-Nashr wa-l-Tawzīʿ.
7. al-Jurjānī. (1306 AH). al-Taʿrīfāt [Definitions] (1st ed.). Egypt: al-Maṭbaʿa al-Khayriyya.
8. Ṣalībā, J. (1982). al-Muʿjam al-falsafī [The philosophical dictionary] (Vol. 1). Beirut, Lebanon: Dār al-Kitāb al-Lubnānī.
9. Lalande, A. (2001). Mawsūʿat Lālānd al-falsafiyya [Lalande's philosophical encyclopaedia] (K. A. Khalīl, Trans.; Vol. 1, 2nd ed.). Beirut–Paris: Manšūrāt ʿAwīdāt.
10. al-Muqahwī, M. Z. ʿA. (n.d.). Mafhūm al-tarbiyya al-islāmiyya [The concept of Islamic education]. Majallat al-Dirāsāt al-ʿArabiyya. Minya University–Kuwait.
11. Badawī, ʿA. al-R. (1980). Falsafat al-dīn wa-l-tarbiyya ʿinda Kant [The philosophy of religion and education in Kant] (1st ed.). Beirut, Lebanon: al-Muʾassasa al-ʿArabiyya li-l-Dirāsāt wa-l-Nashr.
12. Ghīdān, al-S. ʿA. (2016). Falsafat al-dīn ʿinda Kant [The philosophy of religion in Kant]. Majallat al-Rāṣid al-ʿIlmī [The Scientific Observer Journal], (3). Beni Suef University, Egypt.
13. Vanden Auweele, D. (2015). Kant on Religious Moral Education. Kantian Review.
14. Roth, K. (2019). Kant on Education and Evil—Perfecting Human Beings with .... [Journal unspecified].
15. Rovira, R. (2023). The Two Parts of Kant's Moral Religion. Springer Journal.
16. Woo, J. (2025). Why Kant's Moral–Religious Project Was Bound to Unravel. Religions.
17. Wyrębska-Đermanović, E. (2021). Kantian Moral Education for the Future of Humanity. Journal of Philosophy of Education.
18. Farris, J. (2022). The Moral of the Story in Kant's Philosophy of Religion. Ephemeris.

19. Hugaas, J. V. (2025). Politicization of Education: A Kantian Defence of the Right of .... Journal of Philosophy of Education.
20. Palmquist, S. (2008). Kant's Ethics of Grace: Perspectival Solutions to the Moral Problems with Divine Assistance. The Journal of Religion.
21. Palmquist, S. (2009). Kant's Religious Argument for the Existence of God—The Ultimate Dependence of Human Destiny on Divine Assistance. Faith and Philosophy.
22. Palmquist, S. (2008). Kant's Moral Panentheism. Philosophia.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Effect of the Six-Minute Method on Reducing Oral Reading Errors of Students with Reading Difficulties

Murat Başar
Assoc. Prof. Dr.
Uşak University, Faculty of Education, Department of Primary Education, Division of Classroom Teaching, Uşak
Türkiye
E-mail: muratbasar64@gmail.com, ORCID: 0000-0001-6635-4563

Abdurrahman Gürbüz
Teacher
Ministry of National Education, Konya
Türkiye
E-mail: drgurbuz@hotmail.com, ORCID: 0000-0001-5801-4120

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Oral Reading, Oral Reading Errors, Fluent Reading, Reading Difficulties, Six-Minute Method

Abstract

This study aimed to investigate the effect of the "Six-Minute Method" on reducing the oral reading errors of fourth-grade primary school students. The research was designed as an "action research" study, one of the qualitative research designs. The study group consisted of six fourth-grade students attending a public school located in the Selçuklu district of Konya province during the 2013–2014 academic year. Although these students had no physical or mental disabilities, they experienced difficulties in oral reading. The selected texts for reading aloud were: Uçurtma Yarışı (Grade 4), Eşek Arısının Başına Gelenler (Grade 3), Suya Düşen Su (Grade 2), and Bizim Aile (Grade 1), all included in the Turkish coursebooks. Students' oral reading errors were identified using the "Oral Reading Error Identification Form" developed by the researchers, while their reading levels were evaluated through the "Error Analysis Inventory," which revealed that their reading proficiency corresponded to the first-grade anxiety level.

The intervention was conducted using the Six-Minute Method, applied for a total of seventy-two hours: two sessions per day, six hours per week. Instruction was delivered in forty-minute lessons, with two lessons each day, over a three-month period. Ten reading texts, approved by the Board of Education and Discipline of the Ministry of National Education for the 2013–2014 academic year, were used as instructional materials. The implementation was carried out at a private study center near the primary school attended by the participating students.

The findings revealed a significant reduction in students' oral reading errors, with all participants showing progress. Most students improved from the anxiety level to the instructional level, and some approached the independent reading level. The Six-Minute Method was found to reduce the frequency of oral reading errors and enhance students' fluency skills.

Citation. Başar M., Gürbüz A. (2025). The Effect of the Six-Minute Method on Reducing Oral Reading Errors of Students with Reading Difficulties. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 412–433. https://doi.org/10.56352/sei/8.11.32

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems

(SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

This article was derived from the master's thesis entitled The Effect of the Six-Minute Method on Fluent Reading, conducted under the supervision of Assoc. Prof. Dr. Murat BAŞAR and authored by Abdurrahman GÜRBÜZ.

Received: 15.05.2025	Accepted: 10.06.2025	Published: 01.09.2025 (available online)

Introduction

Reading is an essential skill that typically begins to be taught in primary school and accompanies the individual throughout life. Through reading, new learning opportunities emerge, and individuals gain access to a vast ocean of knowledge. At the same time, reading develops thinking skills, enabling individuals to view the world differently and prepare themselves more effectively for life.

Although some individuals may have acquired fundamental skills such as phonological awareness or print awareness, and may even have begun reading prior to formal education, reading and writing instruction generally starts in primary school. At this stage, the primary goal is for students to acquire reading and writing skills, since academic life largely relies on reading activities. While it is expected that most students should acquire proficient reading skills by the end of the first grade, many continue to experience difficulties in subsequent grades. Such difficulties often affect performance in other subjects as well. In the literature, these issues are referred to as reading disorders or reading difficulties.

Reading difficulty is classified in the DSM-IV (2007) among learning disorders and is defined as performance in reading, mathematics, or written expression that falls significantly below expected levels, given chronological age, measured intelligence, and educational exposure.

Reading difficulties are associated with students' inadequate word recognition, slow and inaccurate reading, and poor reading comprehension (Yılmaz, 2008). Such challenges negatively affect students' adjustment to school and social environments. Conversely, difficulties in social or psychological adjustment can also contribute to reading problems (Dökmen, 1994). Observations in schools reveal that some students reach as far as eighth grade while still experiencing reading and writing difficulties. These students often encounter problems in social adjustment as well. For such individuals, reducing reading-related difficulties is essential for both academic and social success.

According to Akyol (1997), the main characteristics of students with reading difficulties include:

- Reversing letters or words when reading,
- Deficiencies in short-term memory,
- Difficulty in maintaining attention,
- Emotional vulnerability,
- Reading without comprehension,
- Eye–motor coordination problems,
- Difficulties in sequencing.

Students with reading difficulties often repeat words, misread, skip lines, pause excessively, separate syllables incorrectly, and make numerous other errors. Their reading pace is considerably slower than that of their peers, which also leads to significant comprehension problems. Family-related issues, lack of interest in reading at home, and psychological or social factors may also be considered among the causes of reading difficulties.

Errors occur in both oral and silent reading. These errors include misreading words, inserting non-existent words, omitting words, or failing to read words even after multiple attempts (Tazebay, 1997). At the primary level, some students demonstrate deficiencies in reading when compared to their classmates or to expected standards. Such students often commit errors such as pausing, regressing, skipping, and repeating words while reading. Additionally, errors may arise from an inability to grasp phrases or sentences, resulting in mechanical or word-by-word reading

(Kavcar et al., 1995). According to Başar (2013), students also make oral reading errors such as syllabication, skipping words, confusing sounds, missegmenting syllables within words, using dialectal pronunciation, and word substitutions.

The oral reading of students with reading difficulties is typically slow and filled with errors, the most frequent being repetition, addition, syllable missegmentation, and omission. Even students without reading difficulties, including fluent readers, may occasionally make such errors. Since reading is an activity that continuously influences individuals' lives, achieving adequate proficiency in this skill is essential. Correcting oral reading errors in struggling students is considered critical, as it can foster both fluent reading and improved comprehension.

Students with reading difficulties may also experience emotional challenges due to their lower performance compared to their peers. Such students often develop reluctance toward reading and gradually lose self-confidence. Addressing reading difficulties and their related problems requires collaborative effort from both parents and teachers. Since reading is a fundamental skill expected to be acquired at the beginning of primary school and used throughout life, children who fail to master this skill may face academic, social, and personal challenges. Continuous collaboration between school and family is therefore essential, alongside targeted interventions to enhance the reading skills of struggling students. Early intervention is particularly crucial for both reading and broader academic development. Otherwise, these difficulties may persist throughout life. In short, reading difficulty is a major concern for educators and researchers, provoking extensive debate and ongoing investigation.

To address reading difficulties, a variety of instructional methods have been proposed. One of these is the **Six-Minute Method**.

The Six-Minute Method

The Six-Minute Method is based on the principle of repeated reading, implemented in a structured and interactive format that pairs students with peers of similar reading ability. This method aims to help students achieve success in reading fluency. It serves as a practical instructional tool for educators, applicable in both small and large group settings, while requiring relatively little time to implement. Because it can be personalized and adapted to the current reading levels of individual students, it is a versatile approach from which all learners can benefit. The Six-Minute Method draws on key literacy skills such as phonological awareness, automatic word recognition, and text reading, all of which are essential for enhancing reading proficiency. The program is designed to be implemented in various instructional contexts by following six straightforward steps (Adams & Brown, 2009).

Required Materials

The materials necessary for implementing the method include: reading passages, two transparent folders, a felt-tip pen, two graph sheets, and a stopwatch.

Implementation Steps

The Six-Minute Method proceeds as follows:

1. The teacher announces the start of the fluent reading activity.
2. Students remove the reading passages from transparent folders.
3. The teacher sets the stopwatch for one minute and instructs the first student to begin.
4. The first student reads aloud.
5. The second student follows along, marking errors on the tracking sheet with a felt-tip pen.
6. When the stopwatch signals, the first student stops reading.
7. The second student stops marking errors.
8. The second student reports the number of words read.
9. The second student reports the number of reading errors made.
10. The second student calculates words correct per minute (WCPM), records the score on the graph sheet, and reports it to the partner.
11. **Error Correction:** The second student shows the misread words and models their correct pronunciation.
12. The first student rereads the mispronounced words correctly.

13. **Graphing:** The first student records his/her score on the graph sheet.
14. The second student hands the felt-tip pen to the first student.
15. The teacher prepares the stopwatch and instructs the second student to begin.
16. The second student reads aloud.
17. The first student follows along, marking errors on the tracking sheet.
18. When the stopwatch signals, the second student stops reading.
19. The first student stops marking errors.
20. The first student reports the number of words read.
21. The first student reports the number of errors made.
22. The first student calculates WCPM, records it on the graph sheet, and reports it to the partner.
23. **Error Correction:** The first student shows the misread words and models their correct pronunciation.
24. The second student rereads the mispronounced words correctly.
25. **Graphing:** The second student records his/her score on the graph sheet (Adams & Brown, 2009).

The Six-Minute Solution

The Six-Minute Solution can be implemented throughout the academic year. The program may begin with word lists and gradually progress toward higher-level reading passages. Before moving to a new passage or list, students repeatedly practice the same material on different days. This structure allows the intervention to be sustained over time and enables continuous development of students' reading fluency (Adams & Brown, 2009).

During implementation, the teacher's primary role is to provide guidance. In particular, the teacher intervenes when students experience difficulty in identifying or correcting oral reading errors. In practice, each student reads aloud for one minute. Following this, the number of words read, errors committed, and the correction process are carried out for two minutes. The same cycle is then applied to the partner student, completing the procedure within six minutes. Depending on students' needs, this duration may be extended.

The Six-Minute Solution differs from other oral reading interventions in that it incorporates peer learning. Working with peers at a similar oral reading level reduces potential emotional difficulties and encourages engagement. The method can be conducted with pairs or larger groups, which constitutes one of its practical advantages. Observations have shown that the number of oral reading errors tends to increase as reading time extends; thus, the flexibility to adjust the duration—either shorter or longer—is another strength of the program. Previous research has demonstrated that the Six-Minute Solution contributes positively to the reading development of students experiencing reading difficulties (Martin et al., 2014; Hanzal, 2013). Therefore, it may be considered an effective approach for improving reading fluency.

Errors committed during oral reading constitute one of the major obstacles to successful reading. In nearly every school, there are students who struggle with oral reading accuracy, which in turn hinders fluency and comprehension. Identifying such students and supporting them with appropriate reading programs is essential. To remediate oral reading errors, the careful selection of effective strategies, methods, and techniques is of critical importance.

A review of the literature in Türkiye shows that Başar et al. (2014) investigated time-based oral reading; Uzunkol (2013) examined word repetition, echo reading, repeated reading, partner reading, and paired reading strategies; Duran and Sezgin (2012) studied echo reading; Kaman (2012) focused on repeated reading; Dağ (2010) explored the 3P method and cloze technique; Özkara (2010) investigated repeated and shared reading; Karasu (2007) examined echo, paired, repeated reading, and the Fernald method; and Yılmaz (2006) studied repeated reading. All reported positive outcomes.

Internationally, Martin et al. (2014) studied natural reading and the Six-Minute Solution; Hanzal (2013) investigated the Six-Minute Solution; Swain et al. (2013) examined repeated reading, listening to text recordings, and teacher-read texts; Morra and Tracey (2006) explored fluency practices including choral reading, echo reading, repeated reading, audiobook modeling, and teacher modeling; and Keehn (2003) evaluated the impact of reader's theater.

The literature review revealed no published studies in Türkiye utilizing the Six-Minute Solution. Internationally, only two studies were found to have applied this method (Martin et al., 2014; Hanzal, 2013). Considering that some fourth-

grade students, despite having no cognitive or physical impairments, commit oral reading errors at an anxiety-inducing level, the Six-Minute Solution was deemed a potentially effective alternative for addressing such difficulties. The feasibility of its implementation even in large classrooms was a key factor in selecting this method for the present study.

Research Aim

The aim of this study is to examine the effect of the Six-Minute Solution on reducing oral reading errors of fourth-grade primary school students. To achieve this aim, the following research questions were addressed:

1. What are the oral reading levels of fourth-grade primary school students before the implementation of the Six-Minute Solution?
2. How does the Six-Minute Solution affect the reduction of oral reading errors among fourth-grade primary school students?

Method

This study employed a **qualitative research design**, as it enables the collection of detailed and in-depth data, direct exploration of participants' perceptions, experiences, and perspectives, and a comprehensive understanding of the current situation (Büyüköztürk et al., 2009). Qualitative research relies on methods such as observation, interview, and document analysis, aiming to present perceptions and phenomena realistically and holistically within their natural context (Yıldırım & Şimşek, 2013).

Specifically, an **action research design** was adopted. Action research represents a professional development model that continuously enables educators to investigate instructional practices, enhance student learning, and promote sustained improvement (Rawlinson & Little, 2004; Miles & Huberman, 1994). Mills (2003; as cited in Kuzu, 2005) defines action research as "a systematic process conducted by teachers, administrators, school counselors, or other stakeholders within a teaching–learning environment, with the aim of gaining insights into how students can learn more effectively and how instruction can be improved."

Study Group

A **homogeneous purposive sampling method** was used to select the study group. This sampling strategy aims to define a specific subgroup by forming a small, homogeneous sample. For example, in research on school–family collaboration, the researcher may select mothers with low socioeconomic and educational backgrounds who show minimal participation in school collaboration; such a group is characterized by homogeneous traits (Yıldırım & Şimşek, 2013). In this study, students with similar levels of oral reading errors and comprehension difficulties were selected to form a homogeneous group.

The study group consisted of six fourth-grade students enrolled in a public primary school in the Selçuklu district of Konya during the second semester of the 2013–2014 academic year. The inclusion criteria were: being a fourth-grade student, demonstrating oral reading errors, experiencing difficulties in reading comprehension, and having no cognitive or physical impairments. Based on these criteria, fourteen students were initially identified in consultation with their teachers. Each student was asked to read aloud an assigned text selected from Ministry of National Education (MoNE) fourth-grade textbooks, and the readings were recorded. Afterward, comprehension questions were administered.

The recordings were analyzed by three experts, who concluded that the students were at an "anxiety level" in oral reading according to the Error Analysis Inventory (Akyol, 2012). Six students were then identified as suitable for inclusion. These students, who displayed oral reading errors and comprehension difficulties but had no cognitive or physical impairments, formed the study group. Necessary permissions were obtained from the school administration, teachers, and parents, and written consent was secured. Pseudonyms were assigned to all students, and data were recorded accordingly.

Data Collection

The research process was carried out by the first author. To collect the primary data, students' oral readings were recorded using a digital audio device. The main data were derived from the analysis of these recordings. Both pre-intervention and post-intervention reading performances were evaluated.

Texts were selected from MoNE-approved Turkish textbooks used during the 2013–2014 academic year. Care was taken to choose passages that were unfamiliar to students and appropriate to their reading level. For this purpose, consultations were held with teachers to determine the textbooks used in grades 1–4. The study utilized texts from alternative MoNE-approved publications that had not been used by the students.

Preliminary assessments were conducted to determine students' reading levels. Initially, students read aloud the fourth-grade text *Uçurtma Yarışı* ("The Kite Race," 172 words, 489 syllables). Recordings revealed that students had difficulty reading at this level. Subsequently, they read the third-grade text *Eşek Arısının Başına Gelenler* ("What Happened to the Wasp," 200 words, 502 syllables), followed by the second-grade text *Suya Düşen Su* ("Water Falling into Water," 196 words, 528 syllables), and finally the first-grade text *Bizim Aile* ("Our Family," 130 words, 322 syllables). Analyses showed persistent difficulties even at these levels. Therefore, the intervention was initiated with first-grade level texts.

In total, ten texts were selected from grades 1–4 textbooks: two from first grade (*Denizatı* [137 words, 347 syllables] and *Temizliğin Önemi* [117 words, 355 syllables]); two from second grade (*Bebek Takımı* [188 words, 470 syllables] and *Uzay Gemimiz Dünya* [159 words, 393 syllables]); two from third grade (*Bayrağa Saygı* [176 words, 484 syllables] and *Uçan İlk İnsan* [238 words, 711 syllables]); and four from fourth grade (*Bir Efsanedir Amasya* [240 words, 646 syllables], *Steteskobun İcadı* [232 words, 632 syllables], *Kış Hazırlıkları* [195 words, 471 syllables], and *Tarladan Fabrikaya Pamuk* [261 words, 634 syllables]). The selected texts represented a balanced mix of narrative and informational genres.

Students' reading levels were determined using the Error Analysis Inventory (Akyol, 2012).

Implementation of the Six-Minute Method

The students whose reading levels had been identified participated in a total of 72 instructional hours using the "Six-Minute Method," conducted twice daily, six days per week. The intervention was delivered in 40-minute class sessions, with two lessons per day. During the implementation, the six students were paired into three dyads. Pairings were arranged so that students with similar oral reading performance levels were matched together. At each session, students began oral reading simultaneously and proceeded through the subsequent instructional steps at the same pace. The intervention lasted three months, totaling 72 hours of instruction. The sessions were conducted in a private study center located near the school. Students attended this center outside regular school hours, and they expressed positive attitudes toward the facility, which offered small classes of ten students and a learning-conducive environment. To sustain motivation throughout the intervention, students were provided with small rewards.

Data Analysis

Content analysis was employed to analyze the data. The principal aim of content analysis is to identify the concepts and relationships that best explain the collected data. This process involves the initial conceptualization of the data, followed by logical organization according to emerging concepts, and ultimately the identification of themes that explain the data (Yıldırım & Şimşek, 2013).

To determine students' reading levels, data from pre-intervention, initial reading, and post-intervention assessments with the Six-Minute Method were analyzed. Recordings of students' oral reading were examined and scored using the "Error Analysis Inventory," adapted by Akyol (2012) from Harris and Sipay (1990), Ekwall and Shanker (1988:412; cited in Akyol, 2012), and May (1986).

Oral reading errors were further identified using the "Oral Reading Error Identification Form," developed by the researchers with reference to Kavcar et al. (1995), Tazebay (1997), Kılıç (2000), Harris and Sipay (1990; cited in Yılmaz, 2006), Akyol (2010), Koçer (2011), and Başar et al. (2014), and structured in tabular format (Gürbüz, 2015).

Table 1. Oral Reading Error Identification Form

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Repetition						
Substitution						
Hesitation						
Syllable omission						
Syllable addition						
Sound confusion						
Sound addition						
Poor breath control						
Word omission						
Dialectal variation						
Ignoring punctuation						
Syllable reversal						
Incorrect syllable division						
Word reversal						
Prolongation						
Failure to produce sound						
Line skipping						
Sound dropping						
Line repetition						
Total						

Description of Oral Reading Errors

- *Repetition*: Repeatedly pronouncing the same syllables or words during oral reading.
- *Substitution*: Reading a word differently from its written form, based on the student's internal representation. For example, reading *"deve"* ("camel") as *"devler"* ("giants").
- *Hesitation*: Slowing down while reading a word without pausing entirely.
- *Syllable omission*: Omitting a syllable while reading. For example, reading *"bakkala"* ("to the grocery store") as *"bakla"* ("broad bean").
- *Syllable addition*: Inserting an extra syllable into a word. For example, reading *"silgi"* ("eraser") as *"silgili."*
- *Sound confusion*: Confusing similar letters. For example, reading *"dağ"* ("mountain") as *"bağ"* ("vineyard").
- *Sound addition*: Adding an extra sound to a word. For example, reading *"kal"* ("stay") as *"kala."*
- *Poor breath control*: Inability to maintain fluency due to inappropriate breathing.
- *Word omission*: Skipping a word during oral reading. For example, reading *"Ali ile Ela el ele"* ("Ali and Ela hand in hand") as *"Ali ile Ela ele."*
- *Dialectal variation*: Reflecting local dialect in reading, e.g., *"elektrik"* read as *"alettirik,"* or *"kağıt"* as *"kiyat."*
- *Ignoring punctuation*: Reading without attention to punctuation marks, impairing fluency.
- *Syllable reversal*: Reversing syllable order, e.g., reading *"sınıfa"* ("to the classroom") as *"sı-nı-af."*
- *Incorrect syllable division*: Incorrectly dividing syllables, e.g., reading *"Ela okula gider"* ("Ela goes to school") as *"El-a ok-ul-a gid-er."*
- *Word reversal*: Reading words backward, e.g., *"tam"* ("complete") as *"mat."*
- *Prolongation*: Extending sounds unnecessarily, e.g., reading *"geldi"* ("came") as *"geldiiiii."*
- *Failure to produce sound*: Inability to articulate certain sounds, often the phoneme /ğ/.
- *Line skipping*: Skipping a line when moving to the next.
- *Sound dropping*: Dropping a phoneme within a word, e.g., *"tahta"* ("board") read as *"taha."*
- *Line repetition*: Repeating the same line instead of moving to the next.

The frequency of each oral reading error was calculated using descriptive statistics. Each student was asked to read the selected passages aloud once, and their performances were evaluated using the Error Analysis Inventory. Students' progress in oral reading was presented in tables.

Findings and Interpretation

This section presents the findings and interpretations regarding the impact of the Six-Minute Method on reducing oral reading errors among fourth-grade elementary students.

Findings for Sub-Problem 1

The first sub-problem of the study was: *"What were the oral reading levels of fourth-grade students prior to the implementation of the Six-Minute Method?"* Data collected before the intervention were analyzed and presented in tabular form.

In order to determine students' oral reading levels, four texts selected by the researcher and approved by experts were used: a Grade 4 text (*The Kite Race*), a Grade 3 text (*What Happened to the Wasp*), a Grade 2 text (*The Dropped Water*), and a Grade 1 text (*Our Family*).

Table 2. Oral Reading Errors in the Text *The Kite Race*

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Repetition	12	6	15	21	9	26
Substitution	5	4	13	–	12	9
Hesitation	9	9	3	1	1	2
Syllable omission	2	1	6	3	7	7
Syllable addition	3	1	1	2	10	5
Sound confusion	2	2	2	2	7	1
Sound addition	4	4	4	–	2	6
Poor breath control	2	1	2	–	–	2
Word omission	1	–	–	–	5	2
Dialectal variation	1	1	–	–	2	–
Ignoring punctuation	4	1	2	1	2	2
Syllable reversal	–	1	–	–	–	–
Incorrect syllable division	4	2	3	–	1	–
Word reversal	–	–	–	–	–	–
Prolongation	–	1	9	2	–	2
Failure to produce sound	–	–	–	–	–	1
Line skipping	–	4	2	–	–	–
Sound dropping	–	3	2	2	–	–
Line repetition	–	–	–	–	–	–
Total	**49**	**41**	**64**	**34**	**58**	**65**

Table 2 shows that students made numerous errors while reading *The Kite Race*. The most frequent error types included repetition, hesitation, substitution, and syllable addition.

Table 3. Oral Reading Errors in the Text *"What Happened to the Wasp"*

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Repetition	2	10	14	14	7	22

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Planning hesitation	2	2	8	4	7	12
Pausing	5	4	2	2	3	3
Syllable omission	2	1	2	–	2	1
Syllable addition	4	–	1	5	2	5
Sound confusion	2	4	4	–	5	1
Sound addition	5	1	6	3	7	6
Breath control error	1	–	3	–	–	3
Omission (skipping)	1	2	2	–	3	4
Dialect use	–	–	3	1	–	–
Orthographic errors	2	2	3	2	1	1
Syllable reversal	–	–	–	–	–	–
Improper syllab. div.	4	1	4	1	1	2
Word reversal	–	–	–	–	–	–
Lengthening	2	–	8	1	–	3
Inability to produce sound	2	–	–	–	–	–
Line skipping	–	1	–	–	–	–
Sound dropping	–	–	–	–	–	–
Line repetition	–	–	–	–	–	–
Total	**34**	**28**	**60**	**33**	**38**	**63**

Interpretation: Examination of Table 3 reveals that students made between 34 and 63 oral reading errors. The findings indicate that the most frequent error types were **repetition, planning hesitation, and sound addition**.

Table 4. Oral Reading Errors in the Text *"Falling into Water"*

Oral Reading Errors

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Repetition	4	16	18	16	4	19
Planning hesitation	8	4	6	3	10	14
Pausing	6	2	4	3	1	1
Syllable omission	10	2	7	4	7	–

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Syllable addition	–	1	3	–	4	2
Sound confusion	2	2	2	1	3	–
Sound addition	–	2	2	1	1	1
Breath control error	–	–	–	–	–	1
Omission (skipping)	1	3	–	2	5	2
Dialect use	1	–	2	1	–	–
Orthographic errors	–	–	–	–	–	–
Syllable reversal	–	–	1	–	–	–
Improper syllable division	4	1	2	–	–	–
Word reversal	–	–	–	–	–	–
Lengthening	–	–	10	4	1	2
Failure to articulate sound	–	1	1	–	–	–
Line skipping	–	–	–	–	–	1
Sound omission	–	–	–	–	–	–
Line repetition	–	–	–	–	–	–
Total	**36**	**34**	**58**	**35**	**36**	**43**

Interpretation: Table 4 indicates that oral reading errors occurred quite frequently. The most common errors were **repetition, planning hesitation, pausing, syllable omission, lengthening, and skipping**.

Table 5. Oral Reading Errors in the Text *"Our Family"*

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Repetition	2	10	8	12	3	7
Planning hesitation	2	2	3	6	3	5
Pausing	4	1	3	3	1	3
Syllable omission	–	–	1	–	3	1
Syllable addition	–	1	3	–	2	6
Sound confusion	–	–	–	2	1	3
Sound addition	–	2	3	–	1	1
Breath control error	–	–	2	–	–	–
Omission (skipping)	1	1	1	2	4	–
Dialect use	–	–	–	–	3	1
Orthographic errors	–	1	2	–	2	2
Syllable reversal	–	–	–	–	–	–
Improper syllable division	5	1	2	–	–	–

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Word reversal	–	–	–	–	–	–
Lengthening	–	–	5	4	–	3
Failure to articulate sound	2	–	–	1	–	–
Line skipping	–	–	–	–	–	–
Sound omission	–	–	–	–	–	–
Line repetition	–	–	–	–	–	–
Total	**16**	**19**	**33**	**30**	**23**	**32**

Interpretation: As shown in Table 5, students made between 16 and 33 errors while reading *Our Family*. The most frequent errors were **repetition and planning hesitation**.

General Interpretation of Initial Findings

Analysis of students' oral reading performances demonstrated that they consistently made a considerable number of errors. Consequently, it was concluded that although these students were enrolled in Grade 4, their reading proficiency was closer to the **Grade 1 level**. Therefore, the intervention began with texts selected from the Grade 1 curriculum.

Findings Related to the Second Sub-Problem

The second sub-problem of the study was: *"How does the Six-Minute Method affect the reduction of oral reading errors among fourth-grade primary school students?"*

To investigate this, data were collected using a set of texts selected by the researcher and validated by experts. The intervention began with **Grade 1 texts** (*The Seahorse, The Importance of Cleanliness*), followed by **Grade 2 texts** (*The Baby Team, Our Spaceship Earth*), **Grade 3 texts** (*Respect for the Flag, The First Human in Flight*), and **Grade 4 texts** (*A Legend Called Amasya, Winter Preparations, The Invention of the Stethoscope, Cotton: From Field to Factory*).

This section presents comparisons between students' **initial oral reading errors** and their **errors after implementation of the Six-Minute Method**, summarized in tabular form.

Table 6. Oral Reading Errors in the Text *"The Seahorse"*

(...translated with pre-test/post-test columns as in your Turkish table...)

Interpretation: Table 6 demonstrates that following the implementation of the Six-Minute Method, all students exhibited a **substantial reduction in oral reading errors**, indicating the method's **positive effectiveness**.

Table 7. Oral Reading Errors in the Text *"The Importance of Cleanliness"*

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Repetition	3 → 1	5 → 1	7 → 3	6 → 2	4 → 2	9 → 3
Planning hesitation	2 → -	4 → 1	5 → 1	3 → -	4 → 1	6 → 2
Pausing	3 → 1	2 → -	4 → 1	1 → -	3 → 1	2 → -
Syllable omission	1 → -	-	2 → -	1 → -	-	2 → -
Syllable addition	2 → -	1 → -	3 → 1	-	1 → -	1 → -

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Sound confusion	2 → -	2 → 1	2 → -	1 → -	1 → -	2 → 1
Sound addition	3 → 1	1 → -	2 → -	2 → -	2 → -	3 → 1
Breath control error	1 → -	-	1 → -	-	-	-
Omission (skipping)	1 → -	1 → -	-	-	1 → -	-
Orthographic errors	1 → -	-	-	-	-	-
Improper syllab. div.	2 → -	1 → -	1 → -	1 → -	-	1 → -
Lengthening	1 → -	-	1 → -	-	-	2 → -
Total	**22 → 3**	**17 → 3**	**28 → *5***	**15 → 2**	**16 → 3**	**28 → 7**

Interpretation: As presented in Table 7, all six students demonstrated a notable reduction in oral reading errors after the Six-Minute Method was applied. Error types such as **syllable omission, orthographic mistakes, and breath control errors** were completely eliminated.

Table 8. Oral Reading Errors in the Text *"The Baby Team"*

Oral Reading Errors	Student A		Student B		Student C		Student D		Student E		Student F	
	Pre		**Post**		**Pre**		**Post**		**Pre**		**Post**	
Repetition	10		2		4		1		17		4	
Planning hesitation	2		-		2		-		12		-	
Pausing	3		1		5		-		5		-	
Syllable omission	3		-		-		2		2		1	
Syllable addition	1		-		1		1		1		1	
Sound confusion	1		1		1		-		2		-	
Sound addition	3		-		-		-		6		-	
Breath control error	-		-		-		-		2		-	
Omission (skipping)	1		-		1		-		-		-	
Dialect use	-		-		-		-		-		-	
Orthographic errors	-		-		2		-		-		-	
Syllable reversal	-		1		-		-		-		-	
Improper syllable division	-		-		4		2		2		1	
Word reversal	-		-		-		-		-		-	
Lengthening	4		-		3		1		14		3	
Failure to articulate sound	1		-		1		-		-		-	
Line skipping	-		-		-		-		-		-	
Sound omission	-		-		-		-		-		-	
Line repetition	-		-		-		-		-		-	
Total	**29**		***5***		**24**		**7**		**63**		**10**	

YÖ: Pre-Method | **YS:** Post-Method

Interpretation: Table 8 indicates a clear decline in oral reading errors across all participants. The method proved especially effective in reducing **repetition, planning hesitation, and pausing**, which were the most common initial errors.

Table 9. Oral Reading Errors in the Text *"Our Spaceship Earth"*

Oral Reading Errors	Student A		Student B		Student C		Student D		Student E		Student F	
	Pre		Post		Pre		Post		Pre		Post	
Repetition	5		–		5		1		10		1	
Planning hesitation	2		–		2		2		6		1	
Pausing	8		2		6		3		6		1	
Syllable omission	–		–		1		–		5		2	
Syllable addition	1		–		1		–		1		1	
Sound confusion	–		–		1		–		–		–	
Sound addition	2		–		2		–		2		–	
Breath control error	–		–		–		–		5		–	
Omission (skipping)	–		–		–		–		–		–	
Dialect use	–		–		–		–		–		–	
Orthographic errors	–		–		–		–		4		–	
Syllable reversal	–		–		–		–		–		–	
Improper syllable division	6		–		2		–		3		–	
Word reversal	–		–		–		–		–		–	
Lengthening	3		1		2		–		13		2	
Failure to articulate sound	–		–		–		–		–		–	
Line skipping	–		–		–		–		–		–	
Sound omission	–		–		–		–		–		–	
Line repetition	–		–		–		–		–		–	
Total	**27**		**3**		**22**		**6**		***55***		**8**	

Pre: Pre-Method | **Post:** Post-Method

Interpretation: Findings from Table 9 show that the Six-Minute Method continued to positively affect students' reading performance. Not only did the total number of errors decrease, but **complex error types** (e.g., sound confusion, improper syllable division) were substantially minimized.

Table 10. Oral Reading Errors in the Text *"Respect for the Flag"*

Oral Reading Errors	Student A		Student B		Student C		Student D		Student E		Student F	
	Pre		Post		Pre		Post		Pre		Post	
Repetition	3		2		28		2		10		–	
Planning hesitation	2		3		6		2		8		3	
Pausing	7		–		1		3		5		2	
Syllable omission	4		–		3		1		5		3	
Syllable addition	–		1		4		–		–		2	
Sound confusion	3		3		–		–		1		–	
Sound addition	4		–		2		2		2		1	
Breath control error	1		–		–		–		5		–	
Omission (skipping)	–		–		–		–		–		–	

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F
Dialect use	1	–	–	–	–	–
Orthographic errors	2	–	2	–	2	–
Syllable reversal	–	–	1	–	2	–
Improper syllable division	10	1	–	–	6	1
Word reversal	–	–	–	–	–	–
Lengthening	5	–	–	–	14	2
Failure to articulate sound	4	–	–	–	2	–
Line skipping	–	–	–	–	–	–
Sound omission	–	–	–	–	–	–
Line repetition	–	–	–	–	–	–
Total	**46**	**10**	**47**	**10**	**62**	**14**

Pre: Pre-Method | **Post:** Post-Method

Interpretation: As reflected in Table 10, students made significantly fewer oral reading errors following the intervention. The method was particularly successful in decreasing **lengthening and unnecessary sound additions**.

Table 11. Oral Reading Errors in the Text *"The First Human in Flight"*

Oral Reading Errors	Student A		Student B		Student C		Student D		Student E		Student F	
	Pre		**Post**		**Pre**		**Post**		**Pre**		**Post**	
Repetition	9		2		32		6		3		3	
Planning hesitation	5		–		10		1		14		1	
Pausing	12		4		5		1		7		3	
Syllable omission	5		2		6		3		10		5	
Syllable addition	2		–		–		1		10		2	
Sound confusion	4		–		–		2		–		–	
Sound addition	1		1		2		1		5		2	
Breath control error	–		–		–		–		4		–	
Omission (skipping)	1		–		–		–		–		–	
Dialect use	–		–		–		–		1		–	
Orthographic errors	–		–		–		–		–		–	
Syllable reversal	1		–		–		–		–		–	
Improper syllable division	8		1		3		1		2		–	
Word reversal	–		–		–		–		–		–	
Lengthening	2		1		–		–		19		2	
Failure to articulate sound	1		1		1		–		1		–	
Line skipping	–		–		–		–		–		–	
Sound omission	–		–		–		–		–		–	
Line repetition	2 (24)		–		–		–		–		–	
Total	**75**		**12**		**59**		**16**		**76**		**18**	

Interpretation: Results in Table 11 demonstrate that students benefited from the Six-Minute Method across multiple error categories. The reduction was consistent, reinforcing the method's effectiveness in improving oral reading accuracy.

Overall Findings

Across all examined texts, the Six-Minute Method produced **substantial reductions in oral reading errors** among fourth-grade students with reading difficulties. While the most frequent errors in the pre-tests included **repetition, planning hesitation, pausing, and syllable omission**, these declined sharply during the post-tests. Moreover, several error categories (e.g., dialect use, orthographic mistakes, breath control errors) were entirely eliminated after repeated implementation.

Table 12: Oral Reading Errors of Students for the Text *"Bir Efsanedir Amasya"*

Oral Reading Errors	Student A		Student B		Student C		Student D		Student E		Student F	
	Pre		**Post**		**Pre**		**Post**		**Pre**		**Post**	
Repetition	5		–		17		1		12		3	
Planning hesitation	–		6		5		1		15		5	
Pausing	15		–		3		5		9		2	
Syllable omission	4		1		3		2		7		4	
Syllable addition	2		–		2		–		–		1	
Sound confusion	2		–		2		–		1		2	
Sound addition	4		1		2		1		3		1	
Breath control error	–		–		–		–		1		–	
Omission (skipping)	–		1		–		–		–		–	
Dialect use	–		2		–		–		3		1	
Orthographic errors	–		–		–		–		–		–	
Syllable reversal	–		–		–		–		–		–	
Improper syllable division	1		–		–		–		–		–	
Word reversal	–		–		–		–		–		–	
Lengthening	2		–		–		–		18		4	
Failure to articulate sound	–		–		1		–		–		–	
Line skipping	–		–		1–10		–		–		–	
Sound omission	–		–		–		–		–		–	
Line repetition	–		–		–		–		–		–	
Total	**35**		**11**		**45**		**10**		**69**		**23**	

Pre: Pre-Method | **Post:** Post-Method

Analysis of Table 12 indicates that after applying the Six-Minute Method, students' oral reading errors significantly decreased compared to the pre-method evaluation.

Table 13: Oral Reading Errors of Students for the Text *"Kış Hazırlıkları"*

Oral Reading Errors	Student A		Student B		Student C		Student D		Student E		Student F	
	Pre		**Post**		**Pre**		**Post**		**Pre**		**Post**	
Repetition	9		–		–		–		7		2	
Planning hesitation	6		–		5		2		13		2	
Pausing	13		2		18		1		6		–	
Syllable omission	5		–		3		2		10		1	
Syllable addition	1		–		1		–		3		2	
Sound confusion	2		–		1		1		3		–	
Sound addition	1		–		1		–		4		–	
Breath control error	–		2		–		–		–		–	
Omission (skipping)	–		–		–		–		–		–	
Dialect use	–		–		–		–		–		–	
Orthographic errors	2		–		–		–		1		–	
Syllable reversal	–		–		–		–		1		–	
Improper syllable division	3		–		–		2		–		–	
Word reversal	–		–		–		–		–		–	
Lengthening	8		1		10		2		13		2	
Failure to articulate sound	–		–		–		–		–		–	
Line skipping	–		–		–		–		–		–	
Sound omission	–		–		–		–		–		–	
Line repetition	–		–		–		–		–		–	
Total	***50***		***5***		**39**		**10**		**61**		**9**	

Analysis of Table 13 shows that after the Six-Minute Method, students made significantly fewer oral reading errors compared to the first reading.

Table 14: Oral Reading Errors of Students for the Text *"Steteskobun İcadı"*

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F

Oral Reading Errors	Student A		Student B		Student C	
	Pre	Post	Pre	Post	Pre	Post
Repetition	8	1	1	1	5	1
Planning hesitation	2	1	9	3	27	9
Pausing	10	1	5	4	2	4
Syllable omission	10	3	4	2	7	6
Syllable addition	–	1	1	2	3	1
Sound confusion	1	–	–	–	–	1
Sound addition	1	–	1	–	2	1
Breath control error	–	–	–	–	4	–
Omission (skipping)	–	1	–	–	1	–
Dialect use	–	–	–	–	–	–
Orthographic errors	–	–	–	–	–	–
Syllable reversal	–	–	–	–	–	–
Improper syllable division	1	–	1	–	3	–
Word reversal	–	–	–	–	–	–
Lengthening	5	–	1	–	13	1
Failure to articulate sound	1	–	–	–	–	–
Line skipping	1–13	–	6–71	–	1–13	–
Sound omission	–	–	–	–	–	–
Line repetition	–	–	–	–	–	–
Total	**52**	**8**	**94**	**12**	**80**	**24**

Pre: Pre-Method | **Post:** Post-Method

Pre-Method (YÖ): Before Implementation, Post-Method (YS): After Implementation

Analysis of Table 14, which presents the oral reading errors of students for the text *"The Invention of the Stethoscope"*, indicates that comparing the initial reading and the post-implementation data of the Six-Minute Method, students' oral reading errors decreased significantly.

Table 15: Oral Reading Errors of Students for the Text *"From Field to Factory: Cotton"*

Oral Reading Errors	Student A	Student B	Student C	Student D	Student E	Student F

Oral Reading Errors	Student A		Student B		Student C		Student D		Student E		Student F	
	Pre		Post		Pre		Post		Pre		Post	
Repetition	9		2		1		1		9		1	
Planning hesitation	–		2		2		1		20		3	
Pausing	11		5		10		1		8		1	
Syllable omission	5		1		3		1		9		3	
Syllable addition	–		–		1		–		3		1	
Sound confusion	3		–		2		–		1		1	
Sound addition	1		–		–		2		3		–	
Breath control error	–		–		–		–		3		–	
Omission (skipping)	–		–		1		–		2		–	
Dialect use	–		–		–		–		–		1	
Orthographic errors	–		–		–		–		–		–	
Syllable reversal	–		–		–		–		–		–	
Improper syllable division	4		–		1		–		1		–	
Word reversal	–		–		–		–		–		–	
Lengthening	5		–		2		–		11		3	
Failure to articulate sound	2		–		–		–		–		–	
Line skipping	–		–		3–37		–		1–13		–	
Sound omission	–		–		–		–		–		–	
Line repetition	–		–		–		–		1–13		–	
Total	**40**		**10**		**60**		**6**		**96**		**14**	

Pre: Pre-Method | **Post:** Post-Method

Analysis of Table 15 demonstrates that after implementing the Six-Minute Method, all students showed a substantial reduction in oral reading errors. These findings indicate that the Six-Minute Method is highly effective in correcting oral reading errors.

Conclusions and Recommendations

This section presents the conclusions derived from the study findings and provides corresponding recommendations.

The study initially examined the oral reading errors students made while reading texts aloud. A text appropriate for fourth-grade students—the grade level they were attending—was selected and read aloud by the students. Analysis revealed that none of the students were performing at the expected fourth-grade reading level. Subsequently, texts at the third-grade level were read aloud, and a high frequency of oral reading errors was observed. Similarly, when second-grade texts were used, students continued to demonstrate frequent reading errors comparable to those in higher grades. Finally, when first-grade texts were read aloud, it was determined that the students' oral reading skills corresponded to a first-grade level. These findings indicate that students' oral reading proficiency is significantly below their actual grade level, and they experience notable difficulties with reading aloud.

Detailed analysis revealed that students frequently repeated words, made planning errors, paused incorrectly, added syllables and sounds, misdivided syllables, and extended sounds during reading.

Previous literature supports these findings. Sidekli and Yangın (2005) reported that the primary reading difficulty of a fifth-grade student was word recognition, which caused oral reading errors. Çaycı and Demir (2006) found that third-grade students with reading difficulties made errors including misreading words, skipping words, adding words, omitting or adding letters/syllables, and pausing longer than two seconds. Yılmaz (2006, 2008) observed similar patterns of reading errors among students who were not performing at their grade level. Sarıpınar and Erden (2010) concluded that students with reading difficulties in grades 1–5 made more letter-syllable omissions, word misreadings, position changes, letter substitutions, and letter-syllable additions than their peers. Sidekli (2010) identified the most frequent errors among fourth-grade students with reading difficulties as word repetition, syllable reading, misreading words, syllable/letter omission, and letter addition. Akyol and Yıldız (2010) reported that a fifth-grade student with reading difficulties most frequently substituted words and misread words. Baş et al. (2014) also observed similar oral reading errors.

Following the determination that the students performed at a first-grade level, ten texts from different grade levels were selected for intervention, with expert consultation. Four texts were chosen at the fourth-grade level, and two texts from each of the other levels. Both narrative and informational texts were included, ensuring equal distribution across grades. The implementation began with first-grade texts, progressing stepwise to fourth-grade texts as students mastered the material. Initial readings revealed a high frequency of oral reading errors; however, following the Six-Minute Method, a substantial reduction in errors was observed across all texts, and all students demonstrated progress.

These findings are consistent with prior research. Hoskisson and Krohm (1974) found that paired reading improved reading skills in second-grade students. Samuels (1979) reported reductions in oral reading errors and improved reading fluency. Koskinen and Blum (1984) examined repeated and paired reading in third graders and observed decreased reading errors. Dağ (2010) used the 3P method with the Gap-Fill technique for students with reading difficulties and found significant reductions in oral reading errors. Multiple studies have confirmed that targeted interventions reduce oral reading errors (Kuhn, 2005; Stoddard et al., 1993; Homan et al., 1993; Rasinski & Zutell, 1990; Dowhower, 1987; Rashotte & Torgensen, 1985; O'Shea et al., 1985; Herman, 1985; Allington, 1983; Anderson, 1981).

Consistent with the literature, the present study demonstrates that the Six-Minute Method is highly effective in reducing students' oral reading errors.

Recommendations

1. Teachers should be familiar with, and apply, strategies, methods, and techniques designed to correct and improve students' oral reading skills. The Six-Minute Method is currently neither widely known nor used in Turkey; therefore, introductory seminars and training programs could be organized to promote its adoption.
2. Students with reading difficulties should be identified within schools, and targeted interventions should be conducted for all such students at appropriate times during the school day.
3. The Six-Minute Method has been demonstrated to reduce students' oral reading errors, and teachers can integrate this approach into Turkish language lessons as well as other subject areas where reading proficiency is important.
4. Since the Six-Minute Method is structured to be implemented with the entire class, it can be applied collectively, allowing all students to benefit from the practice.

5. Future research could examine the factors contributing to students' oral reading errors and investigate how the Six-Minute Method mitigates the impact of these factors.
6. This study was conducted with fourth-grade primary school students. The effectiveness of the method could also be explored in students of different grade levels to determine its generalizability across age groups.

Conclusion

The present study investigated the effectiveness of the Six-Minute Method in reducing oral reading errors among fourth-grade students. Initial assessments revealed that students' reading abilities were significantly below their actual grade level. Analysis of oral reading errors across multiple texts showed frequent mistakes, including word repetition, planning hesitation, inappropriate pauses, syllable and sound additions, misdivided syllables, and elongated sounds. These findings indicate substantial difficulties in reading aloud, suggesting that students' oral reading proficiency is not aligned with their expected educational level.

Following the implementation of the Six-Minute Method, a significant reduction in all categories of oral reading errors was observed. Students demonstrated clear improvements in fluency, accuracy, and self-confidence in reading aloud. This finding aligns with previous research, which consistently shows that structured, timed reading interventions, including paired reading, repeated reading, and guided reading strategies, effectively reduce oral reading errors and improve reading fluency (Hoskisson & Krohm, 1974; Samuels, 1979; Koskinen & Blum, 1984; Dağ, 2010; Kuhn, 2005; Stoddard et al., 1993; Homan et al., 1993; Rasinski & Zutell, 1990; Dowhower, 1987).

The study also highlights the scalability and adaptability of the Six-Minute Method. Its structure allows for both individual and whole-class implementation, making it feasible for diverse classroom settings. Teachers can integrate this method not only in language classes but also in content areas where reading competence is essential. Additionally, the method's positive impact on students' oral reading performance suggests that early and consistent intervention can prevent the widening of literacy gaps and support students' academic development across subjects.

In conclusion, the Six-Minute Method represents an effective, practical, and evidence-based approach for reducing oral reading errors among primary school students. Its application can substantially improve students' reading fluency, enhance their engagement and confidence, and provide teachers with a structured tool to address reading difficulties. Future studies should investigate its long-term effects, its application across different grade levels, and its potential for integration with other reading intervention strategies. The findings of this study strongly support the adoption of the Six-Minute Method as a standard component of literacy instruction in schools, particularly for students experiencing reading challenges.

Acknowledgement

This article was produced from the master's thesis entitled *The Effect of the Six-Minute Method on Fluent Reading*, prepared by Abdurrahman Gürbüz under the supervision of Assoc. Prof. Dr. Murat Başar at Uşak University. The authors would like to express their gratitude to the students and their families who voluntarily participated in this research, as well as to the educational institution and private study center that facilitated the implementation process.

Conflict of Interest

The authors declare that they have no conflict of interest regarding the research, authorship, or publication of this article.

References

1. Adams, G., & Brown, S. (2009). *The six-minute solution: A reading fluency program*. Longmont, CO: Sopris West Educational Services.
2. Akyol, H. (1997). Öğrenme güçlüğü olan çocuklara okuma yazma öğretimi. *Milli Eğitim Dergisi, 136*, 16–19.
3. Akyol, H. (2010). *Türkçe ilkokuma yazma öğretimi* (9th ed.). Ankara, Turkey: Pegem Akademi.

4. Akyol, H. (2012). *Programa uygun Türkçe öğretim yöntemleri* (5th ed.). Ankara, Turkey: Pegem Akademi.
5. Akyol, H., & Yıldız, M. (2010, May 20–22). Okuma bozukluğu olan bir öğrencinin okuma ve yazma becerisinin geliştirilmesine yönelik bir durum çalışması. In *9. Ulusal Sınıf Öğretmenliği Eğitimi Sempozyumu*, Elazığ, Turkey (pp. 128–132).
6. Allington, R. L. (1983). Fluency: The neglected reading goal. *Reading Teacher, 36*(6), 556–561.
7. Anderson, B. (1981). The missing ingredient: Fluent oral reading. *Elementary School Journal, 81*, 173–177.
8. Asadov, A. (2022). Totalitarian obstacles and modern challenges in the study of world literature. *Journal of Language and Literature, 13*(1), 44–51. https://doi.org/10.5281/zenodo.6472714
9. Asadov, A. (2023). The role of world literature in the formation of students' planetary thinking (Azerbaijan case). *Науково-теоретичний альманах Грані, 26*(4), 160–166. https://doi.org/10.15421/172392
10. Asadov, A. (2024). Azerbaijani literature, literary and philosophical view from Eastern experience in the context of Western thought. *Science, Education and Innovations in the Context of Modern Problems, 6*(3–4), 68–80.
11. Asadov, A. (2025). Comparative literary pedagogy: Analyzing the presence of world literature in Azerbaijani school textbooks. *Science, Education and Innovations in the Context of Modern Problems, 8*(3), 512–527. https://doi.org/10.56334/sei/8.3.30
12. Asadov, A. A. (2021). The role of world literature in the formation of students' planetary thinking. *Laplage em Revista, 7*, 360–368.
13. Başar, M. (2013). Oral reading and handwriting miscues which appear in the literacy period and solution offers. *Educational Research and Review, 8*(16), 1348–1359.
14. Başar, M., Batur, Z., & Karasu, M. (2014). Süreye bağlı sesli okumanın okuduğunu anlamaya etkisi. *Milli Eğitim Dergisi, 203*, 5–22.
15. Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2009). *Bilimsel araştırma yöntemleri*. Ankara, Turkey: Pegem Akademi.
16. Çaycı, B., & Demir, M. K. (2006). Okuma ve anlama sorunu olan öğrenciler üzerine karşılaştırmalı bir çalışma. *Türk Eğitim Bilimleri Dergisi, 4*(4), 437–456.
17. Dağ, N. (2010). Okuma güçlüğünün giderilmesinde 3P metodu ile boşluk tamamlama (Cloze) tekniğinin kullanımı üzerine bir çalışma. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi, 11*(1), 63–74.
18. Dökmen, Ü. (1994). *Okuma becerisi, ilgisi ve alışkanlığı üzerine psiko-sosyal bir araştırma*. İstanbul, Turkey: Milli Eğitim Bakanlığı Yayınları.
19. Dowhower, S. L. (1987). Effects of repeated reading on second-grade transitional readers' fluency and comprehension. *Reading Research Quarterly, 22*(4), 389–406.
20. DSM-IV. (2007). *Ruhsal bozukluklar tanısal ve sayımsal elkitabı* (4th ed., rev.; E. Köroğlu, Trans.). Ankara, Turkey: Hekimler Birliği Yayınları. (Original work published 2000, American Psychiatric Association, Washington, DC)
21. Duran, E., & Sezgin, B. (2012). Yankılayıcı akıcı okuma yönteminin akıcı okumaya etkisi. *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi, 31*(2), 145–164.
22. Gürbüz, A. (2015). *Altı Dakika Yönteminin akıcı okumaya etkisi* (Master's thesis). Uşak University, Social Sciences Institute, Uşak, Turkey.
23. Hanzal, A. (2013). *Closing the reading fluency gap in six minutes* (Master of Arts in Education Action Research Papers, Paper 14).
24. Herman, P. (1985). The effect of repeated readings on reading rate, speech pauses, and word recognition accuracy. *Reading Research Quarterly, 20*, 553–565.
25. Homan, S. P., Klesius, J. P., & Hite, C. (1993). Effects of repeated readings and nonrepetitive strategies on students' fluency and comprehension. *Journal of Educational Research, 87*, 94–99.
26. Hoskisson, K., & Krohm, B. (1974). Reading by immersion: Assisted reading. *Elementary English, 51*(6), 832–836.
27. Kaman, Ş. (2012). *Akıcı okuma stratejilerini kullanmanın ilköğretim üçüncü sınıf öğrencilerinde okuma becerisini geliştirmeye etkisi* (Master's thesis). Ahi Evran University, Social Sciences Institute, Kırşehir, Turkey.
28. Karasu, M. (2007). Akıcı okumayı sağlamaya yönelik kullanılan yöntemlerin etkililiği. Retrieved July 2, 2015, from http://www.eab.org.tr/eab/2009/pdf/300.pdf
29. Kavcar, C., Oğuzkan, F., & Sever, S. (1995). *Türkçe öğretimi: Türkçe ve sınıf öğretmenleri için*. Ankara, Turkey: Engin Yayınevi.

30. Keehn, S. (2003). The effect of instruction and practice through readers' theatre on young readers' oral reading fluency. *Reading Research and Instruction, 42*, 39–66.
31. Kılıç, A. (2000). *İlkokuma yazma öğretiminde programlandırılmış öğretime göre metin yönteminin etkililiği* (Unpublished doctoral dissertation). Hacettepe University, Ankara, Turkey.
32. Koçer, D. (2011). *Okuma bozukluğu*. Retrieved July 3, 2015, from http://www.beyazokul.com/okumabozuklugu
33. Koskinen, P. S., & Blum, I. H. (1984). Repeated oral reading and the acquisition of fluency. In J. A. Niles & L. A. Harris (Eds.), *Changing perspectives on research in reading/language processing and instruction: Thirty-third yearbook of the National Reading Conference* (pp. 183–187). Rochester, NY: National Reading Conference.
34. Kuhn, M. (2005). A comparative study of small group fluency instruction. *Reading Psychology, 26*, 127–146.
35. Kuzu, A. (2005). *Oluşturmacılığa dayalı çevirimiçi destekli öğretim: Bir eylem araştırması* (Unpublished doctoral dissertation). Anadolu University, Eskişehir, Turkey.
36. Martin, C., Elfreth, J., & Feng, J. (2014). Effect on reading fluency of struggling third grade students: Computer-assisted intervention versus teacher-guided intervention. Paper presented at Mid-South Educational Research Association Annual Conference.
37. Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: Sage.
38. Morra, J., & Tracey, D. H. (2006). The impact of multiple fluency interventions on a single subject. *Reading Horizons, 47*(2), 175–199.
39. Najaf, A. N., & Najafov, R. (2025). Historical perspectives on education in medieval Azerbaijan (10th–16th centuries): Curriculum, methodology, and student mobility. *Science, Education and Innovations in the Context of Modern Problems, 8*(11), 16–33. https://doi.org/10.56352/sei/8.11.2
40. O'Shea, L. J., Sindelar, P. T., & O'Shea, D. J. (1985). The effects of repeated readings and attentional cues on reading fluency and comprehension. *Journal of Literacy Research, 17*(2), 129–142.
41. Özkara, Y. (2010). An intervention to improve reading levels of students with reading difficulties. *Pamukkale University Journal of Social Sciences Institute, 5*, 109–119.
42. Rashotte, C. A., & Torgesen, J. K. (1985). Repeated reading and reading fluency in learning-disabled children. *Reading Research Quarterly, 20*, 180–188.
43. Rasinski, T. V., & Zutell, J. B. (1990). Making a place for fluency instruction in the regular reading curriculum. *Reading Research and Instruction, 29*, 85–99.
44. Rawlinson, D., & Little, M. (2004). *Improving student learning through classroom action research*. Tallahassee, FL: Florida Department of Education.
45. Samuels, S. J. (1979). The method of repeated readings. *The Reading Teacher, 32*(4), 403–408.
46. Sarıpınar, E. G., & Erden, G. (2010). The applicability of academic skills and sensory-motor assessment tests in reading difficulties. *Turkish Journal of Psychology, 25*(65), 56–66.
47. Sidekli, S. (2010). Action research: Resolving reading and comprehension difficulties of fourth-grade students. *TÜBAR, 27*, 563–580.
48. Sidekli, S., & Yangın, S. (2005). An intervention to develop reading skills of students with reading difficulties. *Kazım Karabekir Faculty of Education Journal, 11*, 393–413.
49. Stoddard, K., Valcante, G., Sindelar, P., O'Shea, L., & Algozzine, B. (1993). Increasing reading rate and comprehension: The effects of repeated readings, sentence segmentation, and intonation training. *Reading Research and Instruction, 32*, 53–65.
50. Swain, K., Leader-Janssen, E., & Conley, P. (2013). Effects of repeated reading and listening passage preview on oral reading fluency. *Reading Improvement, 50*(1), 12–18.
51. Tazebay, A. (1997). *The effect of reading skills on reading comprehension in primary school students*. Ankara, Turkey: Ministry of National Education Publications.
52. Uzunkol, E. (2013). Identification and remediation of problems encountered in the process of fluent reading: A case study. *Mersin University Journal of Faculty of Education, 9*, 70–83.
53. Yıldırım, A., & Şimşek, H. (2013). *Qualitative research methods in social sciences* (9th ed.). Ankara, Turkey: Seçkin Publishing.
54. Yılmaz, M. (2006). *The effect of repeated reading method on correcting oral reading errors and improving comprehension skills of third-grade primary school students* (Unpublished doctoral dissertation). Gazi University, Social Sciences Institute, Ankara, Turkey.
55. Yılmaz, M. (2008). The effect of word repetition technique on improving reading fluency. *Turkish Journal of Educational Sciences, 6*(2), 323–350.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Evolution of Logical Thought in Ancient Greece: From Pre-Socratic Foundations to Aristotle's Systematic Philosophy

Amina Larbi Daouadji
Doctor
Mohamed Ben Ahmed Oran 2 University
Algeria
E-mail: larbidaouadji2020@gmail.com, larbidaouadji.amina@univ-oran2.dz
ORCID: https://orcid.org/8167-6386-0006-0009

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Ancient Greece, Aristotle, Logic, Contemporary Logic

Abstract
Logical studies are among the most precise and focused areas of philosophical inquiry. This precision is one reason why the development of logic has followed a cumulative path. Consequently, the earliest foundations of logic remain a primary reference for any researcher in the field. If we are to identify a key figure in this process, we must speak of Aristotle. However, Aristotle's coherent and structured contributions to logic did not emerge in a vacuum. They were preceded by numerous logical rules and principles formulated by earlier Greek philosophers. While these earlier contributions lacked the systematic organization that Aristotle later achieved, they laid the groundwork for his innovations. Aristotle's logical works are marked by their originality, richness, and diversity, and they continue to withstand the test of time despite the rise of modern symbolic logic and contemporary logical theories.

Citation. Daouadji A.L. (2025). The Evolution of Logical Thought in Ancient Greece: From Pre-Socratic Foundations to Aristotle's Systematic Philosophy. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 434–449. https://doi.org/10.56352/sei/8.11.33

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.01.2025 | Accepted: 01.07.2025 | Published: 02.09.2025 (available online)

Introduction

Human beings, despite their differences, have been practicing logical thinking since they first began using language and constructing speech. Man is a logical thinker by nature, and he alone unlike other living beings is capable of making judgments, distinguishing right from wrong, and deriving conclusions from given premises through mental processes that have no equivalent in the rest of the animal kingdom.

If we were to define the human being in contrast to other species, we might say that he is the creature who thinks logically and applies logical reasoning to acquire knowledge across various disciplines, manage daily life, and assess behaviors and interactions.

Although logical studies are often attributed primarily to the philosopher Aristotle, this does not mean that logical thinking did not exist before him. Elements of logical reasoning can be found in earlier civilizations. In Indian philosophy, for example, we encounter logical contributions in Buddhist thought, the Nyāya school, Gautama's works, and the writings of Dharmakīrti. Likewise, in Greek civilization, logical thinking appeared before Aristotle.

Socrates employed implicit rules of logic in his efforts to expose the contradictions of the Sophists, relying on principles of reason. Plato inherited and developed this method, laying the early groundwork for formal logic. However, the conclusions he reached did not carry the necessity required for valid inference.

Aristotle corrected this by introducing the concept of the middle term, through which necessary conclusions could be reached. His defining contribution was the development of syllogistic theory (theory of the syllogism) and its rules, which had a lasting impact on the evolution of logic.

1. Logic in Ancient Greece Before Aristotle

While Alexander Macfarlane discussed Indian logic and the main schools that engaged with it, Blanché focuses on its development in ancient Greece before presenting Aristotle's theory of logic.

The use of logical principles does not necessarily mean an awareness or formal understanding of them just as a person may speak grammatically without knowing the rules of grammar. If asked to explain the rules, such a person may be unable to do so. The same is true for logic before Aristotle.

Blanché argues that the early Greek logicians used logical principles in their thinking, but they did not yet formulate them as an independent and organized discipline.

1.1 Early Logical Practice Before Aristotle

The early thinkers before Aristotle were content with using logic in their discussions and writings without possessing the ability to define its principles or organize them systematically. Aristotle himself acknowledged this after completing his study of logical [1] matters, stating: "On this subject, nothing had been prepared at all indeed, nothing existed whatsoever." (Blanché, Logic and Its History from Aristotle to Russell, 2004, p. 7)

Despite this, the implicit use of logic in earlier periods remains highly significant. It laid the groundwork and offered the first signs from which formal logic would later emerge. The debates practiced before Aristotle brought to light many problems related to thinking. These challenges inspired and hastened the development of logical theory.

We can say that the evolution of logic passed through three stages. The first stage was marked by a kind of debate that took the form of recommendations. These were not expressed explicitly or systematically but appeared within dialogue [2], The Second and Third Stages of Logic's Development

The second stage relates to the rules and foundations that were used implicitly. This is the work that Aristotle undertook and organized in a book titled Topics.

The third stage marks the shift from the study of dialectical argument to the study of forms of formal reasoning. This development is found in his works Analytics and On Interpretation (Blanché, Logic and Its History from Aristotle to Russell, 2004, p. 8).

Aristotle's contribution can be seen as a transition from spontaneous practice to the conscious understanding of rules. It reflects a move toward systematic thinking. For this reason, Blanché states: "The Prior Analytics marks a systematic break—not only with all earlier forms of logical practice among the Eleatics, Sophists, and Plato, but also with Aristotle's own earlier logical writings." (Ali, 2013, p. 199) Although the early implicit phase of logic was necessary, it can be outlined in the following way:

1.2 Dialectic in the Eleatic School

The Eleatics' style of thinking was characterized by [3] Using Logical Arguments. This approach stems from the school's close relationship with mathematical thinking and its fundamental concepts. This influence reached a significant level. Among the key ideas that shaped their contribution to logic were the notions of the infinite and binary division.

Although some have attributed the founding of the Eleatic school to Xenophanes, its true founder is Parmenides. It is said that the young Socrates met him and was influenced by his ideas and positions. Parmenides himself was initially influenced by the Pythagorean school. However, he later chose a different path and developed a method of his own. This method centered on rejecting the Heraclitean principle of change and replacing it with a principle of unity and stillness. As Heraclitus (535–470 BCE) believed that things are in constant motion and that opposites come together to form harmony within multiplicity, Parmenides took a completely opposite view. He stood in clear opposition to these ideas (Ryan, 2014, p. 731).

Parmenides expressed his philosophy in a poem made up of two parts. The first part addresses truth, and the second presents popular opinions. In the first section, he starts with the central idea of his doctrine: what exists is, and what does not exist is not. In this way, he formulated the principle of identity in logic, which affirms the preservation of the nature and essence of things.

Zeno of Elea (490–430 BCE) was a student of Parmenides. According to Tricot (1992, p. 29), he was "the first conscious dialectician to use dialectic in the sense later defined by Aristotle." His role was to respond to critics and opponents of the Eleatic doctrine. He defended the ideas of unity and stillness and rejected the concepts of movement and plurality. His main criticism was directed toward the Pythagorean school, which believed that the universe consists of numbers. From their perspective, the world is characterized by change, not stability.

Zeno is also credited with articulating the principle of contradiction. As Makovelsky (1987, p. 52) points out, "Zeno was the first to expose contradictions within prevailing concepts." Aristotle also links the development of dialectic to Zeno and considers him one of its first contributors. Zeno presented precise arguments and inferences aimed at challenging the theories of his opponents and revealing the contradictions within them. He did this by using the method of reductio ad absurdum.

Zeno's work focused on refuting opposing arguments. He did not, however, establish a formal set of rules to govern the type of reasoning he used to reject the principles of the Pythagorean school, especially their belief in motion and plurality. Nonetheless, he was highly skilled in demonstrating the impossibility of motion, as shown in examples such as "Achilles and the Tortoise" (Copleston, 2002, p. 70).

What sets Eleatic dialectic apart is its ontological character. It is rooted in a metaphysics of being and built on the idea that the world is intelligible and can be explained in a comprehensive way. This idea later appeared in Aristotle's thought as well, where he continued to maintain a realistic and grounded approach to logic.

1.2. The Controversy of the Sophists

The Sophists [4] Dialectic for Its Own Sake. Among the Sophists, dialectic reached its peak. They practiced argumentation for its own sake. Socrates strongly opposed them, using reason and evidence to expose the flaws and contradictions in their views. The Sophists used arguments to pursue specific goals and personal interests, often following a highly pragmatic and utilitarian approach. Their central claim was that "man is the measure of all things, of what is, that it is, and of what is not, that it is not" (Plato, p. 152). This statement became the foundation of Sophist philosophy, especially in the works of Protagoras (485–411 BCE), Gorgias (480–375 BCE), Hippias (443–400 BCE), and Prodicus (465–396 BCE). These thinkers moved beyond cosmological inquiries and turned to the study of humans in political and ethical contexts. They laid the groundwork for rhetoric and oratory and showed a strong interest in language studies.

The Sophists rejected traditional claims of acquiring knowledge in an objective way. They embraced a relativist view inspired by Heraclitus' philosophy, which held that everything is in flux. They concluded that all opinions, however diverse or contradictory, could be equally valid. Each individual expresses their view according to their own perspective. The Sophists articulated this theory of relativism in Dissoi Logoi (Double Arguments), a text by an unknown author that presents the idea of absolute relativity regarding human concepts such as good and evil, beauty and ugliness, justice and injustice, and truth and falsehood (Makovelsky, 1987, p. 57).

Based on these concepts, the Sophists often paired contradictory notions or treated them as distinct. A single case, for example, could be viewed by a judge as either just or unjust. Things could simultaneously be seen as real or unreal, good or bad—depending on how they relate to other things and within specific contexts.

The Sophists began engaging with logic when they started defending their views in realistic ways. Their public debates attracted large audiences. Protagoras even wrote a book on this skill titled The Art of Persuasion. In it, he analyzed deductive reasoning, using the same method Aristotle would later develop in his work on inference in Topics.

The Sophistic school was not a unified movement. Its thinkers held different intellectual and political views. While Protagoras strongly defended democracy, Lycophron opposed social inequality and the privileges of the aristocracy. Antiphon (480–411 BCE) advocated for equality without distinction. Some Sophists also promoted the idea of natural rights, though their views varied. Certain philosophers linked natural rights to the power of the strong and believed that the role of the state was to protect these rights. Others, however, defended morality, human values, and religion, and associated natural rights with these ethical foundations.

In contrast to the Sophists, Democritus was one of their most vocal critics. He adopted the atomist doctrine of Leucippus (460–370 BCE) and built upon it a comprehensive theory that extended into knowledge, logic, ethics, and other areas. In epistemology, he believed that reason and the senses are distinct but interconnected. Reason reflects the external world through what the senses convey. In logic, he wrote a treatise composed of three books.

The Sophists were also able to distinguish between various types of propositions. In his book Good Speech, Protagoras outlines several forms of predication. These included seven modes of speech: declarative, interrogative, imperative, vocative, narrative, and optative. They also explored modal propositions, such as those involving possibility and probability. Moreover, they paid closer attention to doubtful or uncertain propositions than to those regarded as absolutely true. This approach later appeared in the work of mid-twentieth-century logicians and contributed to important developments in fields such as computer science and artificial intelligence.

1.3. Dialectic in Socrates (Socrates 470–399 BCE)

The importance of Socrates in the history of logic becomes clear through the dialogues and discussions he held with the Sophists. These took the form of questions and answers. In these exchanges, he used the methods of irony and maieutics. Georges Tricot considered him the founder of the philosophy of concepts, which focuses on the essence of things and their basic characteristics. This approach laid the foundation for Plato's theory of Forms, which is based on fixed essences and absolute truths (Tricot, 1992, p. 31).

1.4. Dialectic in Plato (Plato 427–347 BCE)

Blanche devoted a special section to Plato, in which he discussed his various works and the techniques he used in his dialogues. These techniques are seen as early forms of logic.

There is no doubt that Plato's dialogues show great intellectual skill. However, they also contain logical flaws that any trained logician can notice. Plato's reasoning was not always sound. For instance, when he states: "If a soul is wise, it is a good soul. Therefore, a soul that is the opposite of a wise one is a bad soul" (Blanche, Logic and Its History from Aristotle to Russell, 2004, p. 11), he commits a logical fallacy. The conclusion here suggests that from the negation of (A), we can infer the negation of (B). In fact, valid reasoning should move in the opposite direction: from not (B), we conclude not (A).

It is important to highlight Plato's major role in the emergence of logic as a system of rules. Blanche believed that Plato's contribution lies in discovering the laws that govern the movement of phenomena. These same laws also apply to reasoning. While the laws of nature are fixed, humans tend to impose their own views. As a result, reasoning often appears distorted. For this reason, we must learn to use logical rules to avoid errors in reasoning.

In Timaeus, Plato says: "If a god has offered us the freedom to reflect, it is so that we may use it. We must align the cycles of our divine reason with the cycles of thought that occur within us. These cycles are of the same nature, but the divine ones are constant, whereas ours are always changing. Through this study, we can contribute to correct natural calculations. By imitating the perfect, error-free movements of the divine, we may offer guidance to the confusion within us." (Plato, 1970, p. 42)

Thus, the general principles we follow in pursuit of the Forms allow us to gain proper understanding of the nature of knowledge.

Plato used the five universals in what he called the ascending and descending dialectic. The ascending dialectic, also called the upward process, begins with the particular and moves toward the abstract universal or ultimate idea. This process resembles induction, where we move from judgments about parts to judgments about the whole. This is known as material logic (R. Kaltszer, 1982, p. 47).

The descending dialectic, or downward process, moves from the universal to the particular. It is the reverse: from the broadest genus, to the next-level genus, to the species, and finally to the specific differentia (Blanche, Logic and Its History from Aristotle to Russell, 2004, pp. 13–14).

Blanche explains that the method proposed by Plato was later corrected by Aristotle. Plato's method does not lead to necessary conclusions. That is why Aristotle replaced Platonic division with the syllogism, which does produce necessary results. The syllogism includes a middle term that links the major and minor premises and must meet certain conditions. This makes the conclusion valid.

In Platonic division, we cannot always determine whether one term truly belongs to another in the second premise. Instead, the method offers only a choice between two possibilities: (B) or (not B). In contrast, the minor premise in Aristotle's syllogism clearly defines the relationship between two terms. Blanche provided a chart to show the key differences between Platonic division and Aristotelian syllogism, as follows:

Platonic division:

Q is (L)

It is not divided into (B) nor (B)

So Q is it?

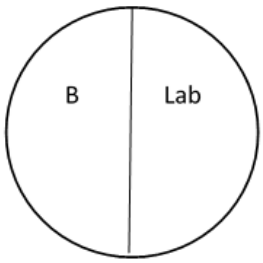


Figure 1 Platonic division

Aristotelian Analogy : (x) is (a)

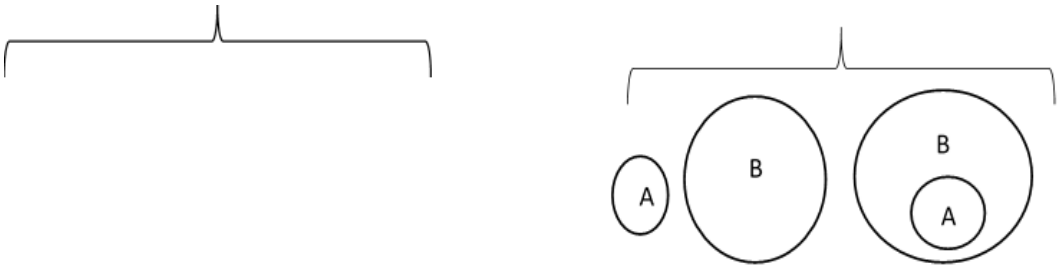


Figure 2 Aristotelian Analogy

(a) is (b) (a) is (lab)

2. Logic in Aristotle (Aristotle, 384–322 BCE)

Blanche begins his historical account of Aristotle's work by discussing a range of logical topics. These include opposition, conversion, syllogism and its interpretation, modal logic, induction, and demonstration. When referring to Aristotle's logical works, Blanche notes that they appear as an organized set of treatises, which might suggest that Aristotle himself arranged them. However, Blanche disagrees with this view.

He explains that the credit for compiling these texts goes to Aristotle's eleventh student, who assembled them in the first century BCE. Blanche also points out that not all of the logical works attributed to Aristotle are necessarily his. Some are genuinely authored by him, while others were only attributed to him. For instance, the De Interpretatione is not directly referenced in his other writings, which casts doubt on its attribution. Similarly, the Categories has also raised questions. Scholars believe that the final chapters of the Categories (Catégories / Κατηγορίαι) are not consistent with the rest of the text. These later sections are thought to have been added in a questionable way, as they seem disconnected from the original topic of the treatise.

2.1. Aristotle's Logical Works and Their Chronological Order

Blanche affirms that the term "Organon" was adopted [5] The term Organon was one of the names given by Aristotle's students to the collection of his logical works. The word means "instrument" or "tool." The number of works attributed to him in this domain has been counted as sixteen. This number is confirmed by both Makovelsky and Georges Tricot in their book Formal Logic.

Porphyry wrote an introduction to these works, known as the Isagoge. This became one of the most well-known texts among Arab scholars (Saliba & Kamal 'Ayyad, Logic and the General Methods of Science, 1942, p. 62). The Isagoge includes the five predicables: genus, species, specific difference, property, and common accident. It is usually followed by Aristotle's Categories (Categoriae or Catégories), which presents ten fundamental categories. Aristotle considered these to be primary genera that are self-evident and do not require definition or proof. They are: substance, quantity, quality, relation, place, time, position, possession, action, and passion. Blanche did not discuss them in detail, believing that their content was already well known. He did, however, mention five additional categories, which he believed were later additions by Aristotle's students.

The second book in order is On Interpretation, also known as the Book of the Proposition. It deals with logical operations such as opposition and conversion, as well as modal propositions, including those that are probable and necessary.

Blanche provides an overview of the third book, Analytics, also referred to as the Analytica. It is divided into two parts. The First Analytics contains two books that present the formal rules of syllogistic theory. The Second Analytics, also in two books, deals with syllogisms based on necessary premises, which is what Aristotle called demonstration.

Finally, we find the Topics, a work composed of eight books. However, the most important texts for logicians have been On Interpretation and the First Analytics (Blanche, Logic and Its History from Aristotle to Russell, 2004, p. 20). In addition, there are references to logical themes in other works, including Aristotle's formulation of the principle of non-contradiction in Metaphysics.

Blanche also notes that certain books—or parts of them—were likely not written by Aristotle himself but were later attributed to him. For example, the last five chapters of the Categories do not align with the introductory material at the beginning of that work.

2.2. Blanchet's Commentary on Aristotle's Logical Works

Blanchet interprets the sequence of Aristotle's works—as presented by his students—as methodical and coherent. He explains that the Categories comes first because it introduces concepts, which serve as the initial step in logic and are necessary for defining terms. It is followed by On Interpretation, which discusses the proposition. A proposition is a composition of two concepts. Then comes the Prior Analytics, which deals with combining propositions in what is known as syllogism. Syllogism, as Blanchet notes, is one form of reasoning. This arrangement, according to him, reflects a progression from the simple to the more complex.

When examining the concept itself, Aristotle did not formulate an elaborate theory. He simply referred to general concepts, as found in the Categories. As for the theory of syllogism, Blanchet argues that Aristotle developed it at a relatively late stage. He even suggests the possibility that Aristotle had not yet discovered the syllogism when he composed the Categories and On Interpretation, as there is no evidence in either text that prepares for such a theory. The absence of a clear logical foundation in these earlier works raises questions. This inconsistency led Blanchet to doubt the authenticity of the received sequence of Aristotle's writings.

Blanchet proposes an alternative ordering of Aristotle's logical corpus. He bases this reordering on internal content and conceptual maturity. In his view, the Analytics—both the first and second books—reflect a degree of logical development that makes it unlikely they were written before the Categories or On Interpretation, which contain less advanced theories.

He also believes that Aristotle only arrived at the idea of syllogism in a later phase of his logical studies. Thus, it is probable that Aristotle was not yet familiar with syllogistic reasoning when composing the Categories. Consequently, Blanchet rejects the traditional order of the works and suggests another sequence that he finds more plausible. He considers the Categories as the starting point, followed by the Topics, and then Sophistical Refutations. He places the Prior Analytics next, beginning from the first part through to the

seventh. After that, he includes the first book of the Posterior Analytics, then returns to complete the Prior Analytics from chapter eight to twenty-two. These chapters address modal propositions. Finally, he refers to the second book of the Prior Analytics, which contains refined analyses of syllogistic theory and introduces logical expressions that serve as keys for understanding more advanced logical operations (Blanchet, Logic and Its History from Aristotle to Russell, 2004, p. 21).

Among the criticisms directed at Blanchet is his omission of any discussion concerning the chronological priority of the later parts of the Prior Analytics. Although he suggests that some of these parts were composed concurrently with the second book of the Prior Analytics, he does not explain their internal sequencing. Moreover, he neglects to address the arrangement of the second book of the Posterior Analytics. Additionally, his claim that modal logic represents the highest stage of logical thought carries some risk. It is entirely possible that modal logic predates syllogistic reasoning.

Despite Blanchet's efforts to establish a chronological order for Aristotle's logical works, he overlooks the later chapters of the Prior Analytics and does not attempt to organize the second part of the Posterior Analytics. Therefore, the true chronological order remains unknown—not only to Blanchet but to all others. Aristotle alone knew the actual sequence in which his logical system developed.

2.3 The Proposition and Immediate Inference

Blanché, in his discussion of concept, definition, and logical propositions, did not merely cite Aristotle's main ideas. He began by examining Aristotle's view of the proposition as a declarative statement that can be either true or false. In such propositions, the subject is either affirmed or denied of the predicate. A proposition, according to Aristotle, is "any speech that is meaningful not in the way of a tool but by convention, and not every speech is assertoric; only that which can be true or false is assertoric, and this is not the case with all statements" (Aristotle, De Interpretatione, 1948, p. 63). What Aristotle calls an assertoric statement is precisely what logic aims to study. Therefore, the grammatical sentence differs from the logical proposition.

This distinction is also emphasized by Avicenna (Ibn Sīnā), who states: "This class of composition that we are about to mention is the declarative composition. It is the one for which we can say of its speaker that he is either telling the truth or lying. As for interrogatives, requests, wishes, hopes, and exclamations, we do not say of their speaker that he is truthful or lying" (Ibn Sīnā, Al-Ishārāt wa al-Tanbīhāt, 1960, pp. 267–268). From this, we understand that every proposition is a sentence, but not every sentence is a proposition.

Blanché views propositions through two main lenses: quantity and quality. In terms of quality (qualité), propositions are either affirmative or negative. In terms of quantity, they are either universal or particular. Quality is not determined by the subject or predicate, but rather by the copula that connects or separates them. Considering both quantity and quality together yields four types of propositions: two affirmative and two negative.

The distinction between universal and particular propositions depends on the nature of the terms. If the subject is a proper name, the proposition is singular. If the subject is a general term, the proposition is universal. Blanché notes that Aristotle paid little attention to singular propositions. This, he argues, is due to their unsuitability for conversion, which requires propositions of the same type, allowing the subject and predicate to switch places. Singular propositions lack referents in the way universals do. As for indefinite propositions, Aristotle treated them as equivalent to particular ones.

Blanché distinguishes between two types of universal propositions: essential universals and existential universals. In his Topics, Aristotle also divides particular propositions into definite and indefinite types.

Propositions can be approached in two ways: conceptually or extensionally. If interpreted extensionally, the subject falls under the predicate. If interpreted conceptually, the predicate is included in the subject. Blanché raises the question of which interpretation Aristotle preferred. After reviewing various interpretations, he

notes that philosophers have generally explained Aristotle's syllogistic theory conceptually, where the relation between terms is one of necessity. In contrast, logicians and mathematicians tend to offer an extensional or formal interpretation, where the relationship is one of inclusion.

Yet Aristotle, according to Blanché, employed both interpretations. He did not limit himself to an extensional view but also adopted a conceptual perspective. Nevertheless, Blanché argues that Aristotle favored the conceptual interpretation. This is evident in categorical propositions, especially when the subject is general. In such cases, the predicate necessarily follows from the subject. However, when it comes to syllogistic reasoning, the extensional interpretation becomes more dominant, particularly in discussions of formal validity (Blanché, La Logique et son histoire d'Aristote à Russell, 2004, pp. 30–31).

Blanché's analysis of Aristotle's syllogism reveals his own preference for the conceptual view, a position he maintains in his critique of formal logic in La Raison et le discours, where he criticizes the purely extensional interpretation. In contrast, Marie-Louise Roure interprets Aristotle's logic as leaning toward an extensional reading, even though Aristotle himself believed that conceptual understanding grounds the referents of terms (Roure, M., 2014, p. 18).

Blanché identifies three key relationships between the four standard categorical propositions: inclusion, expressed by the universal affirmative when the subject is included in the predicate; exclusion, expressed by the universal negative when the subject is denied of the predicate; and intersection, represented by the particular affirmative and particular negative propositions.

2.4 Opposition and Conversion

Blanché's discussion of propositions does not stop at their classification. He also examines a basic mental operation—reasoning which results from the combination of propositions. Reasoning is divided into two types. Immediate inference involves two propositions, where the conclusion is drawn directly from a single premise. Mediate inference, on the other hand, involves three propositions: two premises and a conclusion.

Focusing on immediate inference, the conclusion (i.e., the second proposition) is obtained by altering the quantity, quality, or both of the first proposition. The resulting proposition is the conclusion. This kind of inference is called opposition. The second type of immediate inference is conversion, where the subject and predicate exchange places.

A. Opposition

The concept of opposition in Aristotle has been previously noted, defined as follows: "One thing opposes another in four ways: either by relation, or by contrariety, or by privation, or by affirmation and negation" (Aristotle, De Interpretatione, 1948, pp. 38–39). Aristotle's types of opposition do not exhibit homogeneity or strict ordering. The first three kinds of opposition occur between concepts, while only the fourth kind exists between propositions.

Blanché points out that the theory of opposition and conversion is fully present throughout Aristotle's logic because dialectic and debate require it, even though Aristotle himself does not explicitly present this classification in exactly the same terms.

In his De Interpretatione, Aristotle discusses opposition between propositions, highlighting key differences between universal and particular propositions, as well as their interrelations. Opposition is fundamental in argumentation and necessary for refuting opponents and dismantling their arguments.

Regarding the negation of propositions, Aristotle distinguishes two types: contradiction and contrariety. The latter does not represent absolute opposition, whereas contradiction involves total opposition. In

contradiction, two propositions cannot both be true nor both be false. From the contradiction relation, one can infer the truth of one proposition from the falsehood of the other, and vice versa.

In contrariety, however, the truth of one proposition implies the falsehood of the other, but the falsehood of one does not necessarily imply the truth of the other. Blanché notes that Aristotle initially did not differentiate sharply between contradiction and contrariety, treating contradictory propositions similarly to contrary ones (Blanché, Logic and Its History from Aristotle to Russell, 2004, p. 35).

Contradiction occurs between the universal affirmative and the particular negative, and between the universal negative and the particular affirmative. Contrariety, on the other hand, exists only between the universal affirmative and the universal negative. The contrary propositions can both be false when the corresponding particular propositions are true simultaneously.

Aristotle did not explicitly include this relationship between particulars; this extension was added later by logicians. This omission does not mean Aristotle was unaware of the law, as he alludes to it in De Interpretatione. As for subalternation (implication from universal to particular), Aristotle does not explicitly address it, but it was later completed by Apollonius of Perga to render the square of opposition more coherent.

B. Conversion

Another form of immediate inference is called conversion, in which the subject and predicate of a proposition are exchanged. Both subject and predicate must be concepts. Blanché notes that the predicate of a proposition varies; it may denote essence, making the proposition a conceptual definition, or a property particular to the subject, or a genus, or even an accident.

Aristotle encountered no problem converting propositions when the predicate expresses essence or a particular property, since in such cases the truth-values coincide for subject and predicate. Thus, only propositions containing essence or particular property are convertible.

Conversion of the universal negative proposition is straightforward because quantity and quality are preserved. However, conversion of the universal affirmative differs. In the original proposition, the species is included under the genus, but the reverse—placing the genus under the species—is invalid. Therefore, the converse must be particular; a part of the genus is included in the species. The particular negative proposition cannot be converted.

2.5 Syllogism

Aristotle discusses various types of inference in his Topics. Alongside inductive reasoning, he presents deductive reasoning, which moves from universal judgments to particular ones. Deductive reasoning is itself divided into demonstrative, dialectical, and sophistical types. The classification depends on the nature of the premises: demonstration involves necessary premises (or those derived from necessary principles), whereas dialectical syllogisms rely on generally accepted premises, which may be refuted as errors if falsely presented as commonly accepted (Blanché, Inference, 2003, p. 127).

Aristotle defines syllogism as follows: “It is a discourse in which, given certain things, something different from the things given necessarily follows of necessity because of their being given” (Prior Analytics, 1980, p. 142).

He acknowledges that syllogism is the most expressive form of inference. However, he admits that some valid inferences may not appear in syllogistic form.

A syllogism consists of three terms and three propositions. Each term appears twice. One term serves as the middle term, connecting the other two in the premises, which leads to the conclusion uniting the two remaining terms. The terms differ in extension: the term with the broadest extension is called the major term, the narrowest is the minor term, and the intermediate term is the middle term.

The well-known example "All humans are mortal; Socrates is a human; therefore, Socrates is mortal" was never used by Aristotle himself. He did not employ singular propositions and instead used literal variables such as (S), (P), and (M) to represent terms. The first to formulate Aristotle's syllogism with such variables was Alexander of Aphrodisias, aiming to demonstrate deductively how conclusions follow from premises (Łukasiewicz, 1961, p. 21).

Blanché criticizes the view that these symbols were central to Aristotle's late works, asserting that Aristotle's use of variables was more a matter of convenience than systematic formalization.

Some scholars, including Bocheński and other contemporary logicians, consider Aristotle the true originator of formal logic. In contrast, Hamblin argues that Aristotle's logic is overly described as formal and that it lacks the rigor found in modern formal systems [6] Stoic logic was influential, but Łukasiewicz believes that Aristotle's brief mention of it marks the initial step toward formal logic (Blanché, Logic and Its History from Aristotle to Russell, 2004).

Blanché raises the issue of using variables and symbols instead of words in logic and links this to how we perceive the discipline. If logic is viewed as a theoretical science, comparable to mathematics, the use of symbols becomes necessary. However, if logic is considered a normative science, akin to ethics or aesthetics, words are preferred. Aristotle, however, was not sufficiently aware of these possible perspectives on logic.

Returning to syllogism, Aristotle classified syllogisms into three types according to the role of the middle term. He then examined the possible combinations, known as figures. In Leach figure, he identified a set of valid moods based on formal criteria, without delving into the content of the propositions. The three syllogistic figures Aristotle described are as follows:

First Figure: Here, the minor term is predicated of the middle term, and the middle term is predicated of the major term. Aristotle states: "The last term is universal of the middle, and the middle is universal of the first" (Prior Analytics, 1980, p. 113). This figure produces four valid moods:

- If all S is included in all M, and M is predicated of all P, then S is predicated of all P.
- If S is excluded from all M, and all M is included in all P, then S is excluded from all P.
- If S is included in all M, and M is predicated of some P, then S is predicated of some P.
- If S is excluded from all M, and M is predicated of some P, then S is excluded from some P.

Second Figure: In this figure, the middle term is the predicate in both premises. Aristotle explains: "If a single thing is predicated universally of one thing and not at all of another, or predicated of both" (Prior Analytics, 1980, p. 118). This figure also yields four valid moods:

- If M is not included in all S, while it is predicated of all P, then S is excluded from all P.
- If M is included in all S and excluded from all P, then S is excluded from all P.
- If M is excluded from all S and predicated of some P, then S is excluded from some P.
- If M is included in all S and excluded from some P, then S is excluded from some P.

Third Figure: Here, the middle term serves as the subject in both premises. Aristotle describes it as: "If both premises are predicated of the same thing, one universally and the other partially, or both universally, or neither universally" (Prior Analytics, 1980, p. 124). This figure produces six valid moods:

- When both S and P are included in all M, then S must be included in some M.
- If some M is included in P and all M in S, then some S is not P.
- If some M is included in all P and all M in S, then some S is included in P.
- If all M is P and some M is S, then some S is P.
- If no M is P and some M is S, then some S is P.
- If some M is P and all M is S, then some S is not P (Tricot, 1992, p. 274)

The fourteen moods mentioned earlier include both valid (complete) and invalid (incomplete) syllogisms. The complete syllogisms belong to the first figure. Several reasons support the greater completeness of this figure. First, it is widely used in sciences and mathematics. Second, the conclusions derived from this figure express the essence of things, whereas the conclusions of the second and third figures tend to be either negative or partial. Third, the first figure is self-sufficient; it compensates for the shortcomings found in the second and third figures.

Beyond these three reasons, another important factor favors the first figure: the middle term occupies an intermediate position between the major and minor terms, both in location and in terms of its scope of reference.

Regarding the second and third figures, although they are productive, they appear somewhat unnatural, particularly the second figure, where the middle term has the widest and most inclusive scope.

The proof of the validity of the second and third figures can only be achieved through the first figure. Here, "proof" does not mean direct proof but rather reduction of syllogisms to the first figure. Aristotle believed that the moods of the second and third figures are defective because the relationships of inclusion between the middle term and the major and minor terms are not harmonious, which makes the resulting conclusion unclear (Blanché, Logic and Its History from Aristotle to Russell, 2004, p. 50).

The syllogisms of the first figure, which Aristotle considers complete and legitimate, were challenged by nineteenth-century logicians. They started from different assumptions than Aristotle's. His preference for the first figure and rejection of the others stemmed from his belief that the figure is fundamental. The first figure was the original one Aristotle discovered, or in a narrower sense, the first mood of the first figure.

Blanché points out that the names Aristotle gave to the three terms can cause some confusion. In the second figure, where the middle term is predicate in both premises, it becomes, from a validity perspective, the major term. In the third figure, where the middle term is subject in both premises, it becomes, from a validity standpoint, the minor term.

The identification of a syllogistic figure depends on the position of the middle term within it. This aligns clearly with the aims of formalism. From this modern perspective, it is necessary to acknowledge the existence of a fourth figure. This figure considers the case where the middle term is predicate in the major premise and subject in the minor premise. Therefore, logicians who align with formalism emphasize the importance of including a fourth figure [7] This figure also produces four valid and legitimate moods. Some may question whether Aristotle was aware of these valid moods. The answer lies in the fact that we find five such valid moods discussed by Aristotle in Book I, Chapter 7, and Book II, Chapter 1 of the Prior Analytics. These moods closely resemble those of the fourth figure. Both Łukasiewicz and Bocheński argue that these two chapters were added later, after Aristotle had already presented the three figures and their types in Chapters 4 and 6 of Book I (Łukasiewicz, 1961, pp. 16–17).

2.6 Interpretation of Aristotelian Syllogism

Aristotelian logic can be seen as somewhat distorted. For example, the terms we use like "Socrates" or "human" were not explicitly mentioned by Aristotle. Łukasiewicz observes that Aristotle employed only symbols such as (A, B), representing universal terms. Essentially, Aristotle presented all propositions as

conditional syllogisms with a necessary relation between the two statements. The first statement acts as the premise, while the second serves as the conclusion.

Therefore, the debate over whether Aristotle's syllogistic theory belongs to the class theory (Théorie des classes) or the theory of predicates is somewhat futile. Aristotle's theory stands on its own, with its own issues and axioms. Łukasiewicz explains that Aristotle's syllogistic system represents an initial conception of what mathematical logic later developed as the theory of "classes" (Łukasiewicz, 1961, pp. 16–17).

Aristotle's proof of the syllogistic moods involves reducing them to the first figure, specifically to two moods: BARBARA and CELARENT. However, Aristotle later recognized the possibility of conversion and reduction. The syllogisms of the first figure can be reduced to some moods of the third figure. Likewise, the negative syllogisms of the first figure can be reduced to those of the second figure.

Aristotelian logic, as Łukasiewicz noted, is formal but not purely symbolic. Blanché agrees with this view. Although Aristotle used variables, he did not explicitly represent them symbolically. This raises Blanché's question: if Aristotle's logic is not symbolic, can it still be considered formal?

Bocheński and Łukasiewicz raise this question and attempt to answer it through several inquiries. They ask, for example, if Aristotle used symbols instead of terms or propositions, why did he not provide a clear explanation for this usage? He employed the same symbols both for terms and propositions. Additionally, Aristotle sometimes uses the word "statement" to refer both to a single proposition and to a syllogism (a set of propositions). Another issue concerns the nature of the predicate and subject of propositions: are they concepts or specific terms?

To verify the legitimacy and validity of moods, Aristotle employed concrete examples. Initially, the logical form served merely as a tool to achieve the essential goal of logic: truth. Over time, this idea evolved until emphasis shifted to the structural forms of syllogisms rather than their concrete applications.

Blanché raises another concern regarding the classification of Aristotelian logic. According to Łukasiewicz, Aristotle's logical theory is purely scientific, free from any philosophical implications. This view is supported by the fact that Prior Analytics can be understood without prior knowledge of Aristotle's Metaphysics. However, Blanché argues that this view oversimplifies the issue, especially from a historian's perspective who considers the interconnectedness of Aristotle's work. Aristotle's logic fits perfectly within his philosophical system, as does Stoic logic.

The categorical form Aristotle uses aligns with his metaphysical concept of substance. The middle term corresponds to the principle of causality; it acts as the cause of the syllogism (Blanché, Logic and Its History from Aristotle to Russell, 2004, p. 59). Therefore, Aristotle's logic is somewhat narrow, reflecting only the inclusion relation while excluding others. This can only be properly understood by linking it to Aristotle's metaphysics.

Łukasiewicz accepts the idea of defining syllogistic figures based on the position of the middle term, without relying on inclusion relations between terms. This implies he does not consider Aristotelian logic as symbolic logic. Otherwise, Aristotle could have abandoned defining syllogisms by the position of the middle term and moved to a validity-based interpretation, which is closer to the truth, rather than blaming Aristotle for rejecting the fourth figure (Blanché, Logic and Its History from Aristotle to Russell, 2004, p. 63).

2.7 Induction and Demonstration

Induction and demonstration are not solely related to logic in its strict sense. They are also connected to epistemology and methodology. While syllogism, according to Aristotle, is a hypothetical science and serves as a tool for knowledge, it cannot be regarded as the sole instrument of science. This is because syllogism

requires the truth of its premises to be established. Such truth demands proof in two possible ways: either by infinite regression or by circular demonstration.

Initially, knowledge derives from sensation, but sensation alone is insufficient for its formation, as it applies only to particulars, whereas knowledge is universal. Therefore, induction is necessary. Through induction, we move from judgment about particulars to judgment about universals. Following this, demonstration allows us to reach conclusions. Learning occurs only through induction and demonstration. If induction starts from particular cases, demonstration begins with universal cases. Moreover, universal judgments are made only through induction, and induction itself ultimately rests upon sensation. As Aristotle states, "Demonstration proceeds from universal premises, induction from particulars, and we cannot know the universal except through induction" (Posterior Analytics, 1980, p. 385).

The distinction between induction and syllogism does not negate the relationship between them. This connection exists only in material terms, not formal ones. Syllogistic reasoning is based on the interrelation of concepts, which requires a middle term linking the premises. In induction, however, there is no middle term; instead, it concerns a collection of observed instances. Lachelier (1832–1918) argues that induction is a form of the DARAPTI syllogism, which yields a particular affirmative conclusion. He also notes that this is a syllogism of the third figure. Regarding the results each method produces, they differ greatly: induction's results are probabilistic, whereas syllogistic results are absolutely certain.

Jules Tricot views induction in its syllogistic form as drawing the major premise from comparing the minor premise and the conclusion. Hence, induction in this form is reversed compared to Aristotle's view, where the conclusion should be the major premise and the middle term becomes the minor premise. Therefore, the middle and minor terms should share the same extension, which contradicts the normal arrangement (Tricot, 1992, pp. 370–373).

Aristotle accepts induction temporarily because he sees knowledge as fundamentally deductive, favoring syllogism. His goal is to eliminate induction, which does not rely on the principle of identity. For Aristotle, particular induction is foreign to formal logic since it is synthetic, not analytic.

Demonstration, on the other hand, represents the ultimate goal of science. Aristotle's mistake was his belief that science could be addressed purely deductively through analysis of forms. However, modern science recognizes the necessity of returning to experience as a crucial means to achieve deductive reasoning, the highest aim of science. John Stuart Mill confirms this when he says, "Syllogism is originally connected with a theory of meaning... but the universal major premise 'all men are mortal' corresponds, according to empiricists, to a known number of particular experiences" (Briand, 1987).

3. Conclusion

From the foregoing discussion, we can draw several key conclusions:

Logic is as ancient as humanity itself. In ancient Greece, many early signs and logical inquiries were closely linked to dialectical debates among the Sophists, Socrates, and Plato. However, the logical works produced in ancient Greece did not develop into a fully established scientific theory that could serve as a crucial reference for contemporary logical studies.

Aristotle's work is distinguished by its richness, diversity, and originality. It is also characterized by clear organization and coherence among its parts.

Aristotle's theory of syllogism stands as his most significant contribution to logic. It exerted a considerable influence on later logicians, particularly through the work of Lukasiewicz, who authored Aristotelian Syllogistic from the Perspective of Modern Logic.

Aristotle's syllogism centers on a single relation—subsumption. However, this relation alone proved insufficient because logic also encompasses other relations, such as equality, inclusion, and logical product, among others.

Aristotle showed interest in possible and future contingencies. This focus became the starting point for modern logicians who sought to establish three-valued logic.

Aristotle gave equal attention to both the conceptual and the truth-relational aspects of logic. In contrast, contemporary formal logic tends to emphasize formal structure at the expense of conceptual interpretation. This divergence distances modern logical studies from the familiar philosophical approach—a positive aspect credited to Aristotle.

4. References and Explanations:

[1] Logicians: We use this term to refer collectively to those engaged in logic. Dr. Mahmoud Yaacoubi has employed this word frequently in his works, including Logic and Its History and Introduction to Contemporary Logic. He finds this term particularly suitable, especially given the need for Arabic terminology that parallels logical terms in other languages.

[2] Dialogue: To say "he dialogued," "he argued," or "engaged in dialogue" means to debate or discuss. Dialogue refers to the exchange or review of speech in conversation between a speaker and an interlocutor. The purpose of dialogue is to generate new ideas. (Sleeba, Philosophical Dictionary, 1982, p. 501)

[3] The Eleatic School: This school is named after Elea (ELEA) in southern Italy. It is said that its founder was Xenophanes. Although he never visited Elea itself, Xenophanes is considered its founder because he rejected the idea of gods having bodies. He agreed with the school's leaders—Parmenides, Zeno, and Melissus—in affirming the unity of all things. This static unity is called "the divine." Aristotle reported that Xenophanes stated that "the One is God," who in no way resembles humans either in body or thought. (Kamel & Jalal Al-Ashri, p. 70)

[4] Sophist: The term originally meant a skilled person in a particular art, especially teachers of philosophy and rhetoric. Sophists first appeared in the mid-fifth century BCE. Before that, young Greeks received initial education from language scholars. Sophists were the first higher education teachers and were itinerant, giving lessons in each city they visited. Their lectures were costly, with Protagoras earning, according to Plato, more than a sculptor. (Pierre Degennebié, 2014, p. 15)

[5] The Organon: This is the collection of Aristotle's logical works, including Categories, On Interpretation, Analytics (First and Second), Topics (Dialectic), Sophistical Refutations, and Introductory Topics (Isagoge). (Lalande, 1996, p. 724). The collection consists of six books, though some add Rhetoric and Poetics, increasing the total to eight.

[6] System (Nasq): In philosophy and theoretical sciences, this refers to a set of coherent and interconnected ideas that support each other, such as Aristotle's system. (Madkour, 1983, p. 201)

[7] The Fourth Figure of the Syllogism: The syllogistic form where the middle term is the subject in the major premise and the predicate in the minor premise is traditionally attributed to Galen. In fact, Galen discussed compound syllogisms made of four terms. However, the specific fourth figure involving three terms was not discovered until the sixth century CE. It is important to note that Aristotle was not unaware of the five valid forms generated by this syllogistic figure.

Acknowledgment

The author expresses sincere gratitude to the Department of Philosophy at Mohamed Ben Ahmed Oran 2 University for their continuous support and encouragement in the pursuit of this research. Special thanks are extended to colleagues and mentors who provided valuable insights on the historical development of logic, and to the academic community whose works laid the foundation for this study.

Conflict of Interest

The author declares no conflict of interest. This research was conducted independently, without any financial or personal relationships that could inappropriately influence the findings or interpretations presented in this article.

5. References:

1. Plato. (n.d.). Le Sophiste. La Bibliothèque Électronique du Québec.
2. Avicenna. (1960). Al-Isharat wa al-Tanbihat (Vol. 1). Edited by Suleiman Donya. Cairo: Dar Al-Maaref.
3. Aristotle. (1948). The Organon (Vol. 1). Edited by Abdel Rahman Badawi; translated by Ishaq ibn Hunayn. Cairo: Egyptian Book House Press.
4. Aristotle. (1980). Posterior Analytics (Vol. 1). Edited by Abdel Rahman Badawi; translated by Abi Bishr Mata ibn Yunus. Beirut: Dar Al-Qalam.
5. Aristotle. (1980). Prior Analytics (Vol. 1). Edited by Abdel Rahman Badawi; translated by Tadhari. Beirut: Dar Al-Qalam.
6. Plato. (1970). Timaeus. Edited by Albert Rivaud; translated by Fouad Georgy Barbara. Damascus: Ministry of Culture and National Guidance Publications.
7. Alexander Makovelsky. (1987). History of Logic. Translated by Nadim Alaa Eldin Ibrahim Fathi. Beirut: Dar Al-Farabi.
8. Émile Bréhier. (1987). Modern Philosophy (Vol. 1, 2nd ed.). Translated by George Tarabishi. Beirut: Dar Al-Taliah for Printing and Publishing.
9. Jules Tricot. (1992). Formal Logic (Vol. 2). Translated by Mahmoud Yaacoubi. Algiers: University Press.
10. R. Galtzer. (1982). Plato. Translated by Ibrahim Rashid. Beirut: Lebanese Book House.
11. Robert Blanché. (2004). Logic and Its History: From Aristotle to Russell. Translated by Mahmoud Yaacoubi. Algiers: Modern Book House.
12. Robert Blanché. (2009). Reasoning (Vol. 1). Translated by Mahmoud Yaacoubi. Algiers: Modern Book House.
13. Marie-Louise Rour. (2014). Principles of Contemporary Logic (Vol. 1). Translated by Mahmoud Yaacoubi. Algiers: Modern Book House.
14. Mohamed Ali Abu Rayan. (2014). History of Philosophical Thought: Greek Philosophy from Thales to Plato (Vol. 2). Cairo: Dar Al-Wafaa for Printing and Publishing.
15. Mahmoud Mohamed Ali. (2013). Ancient Formal Logic Between Originality and Dependency (Vol. 1). Cairo: Dar Al-Wafaa for Printing and Publishing.
16. Jan Lukasiewicz. (1961). Aristotelian Syllogistic from the Perspective of Modern Formal Logic. Translated by Abdel Hamid Sabra. Alexandria: Al-Maaref Press.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Universities and the Contemporary Educational Environment in Developed Countries: Comparative Analysis of Institutional Innovation, Entrepreneurial Functions, and International Research Collaboration in Germany, Poland, and the Czech Republic

Boyukagha Mikayilli
Researcher
Ministry of Science and Education of the Republic of Azerbaijan,
editor-in-chief of "Preschool and primary education" scientific-methodical journal
Azerbaijan, Baku
E-mail: tehsil.zaman@mail.ru
ORCID: https://orcid.org/0000-0001-8931-0459

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords university rankings, innovations, entrepreneurial university, addictology, scholarship programs

Abstract
This article examines the activities of prestigious universities in Germany, Poland, and the Czech Republic, focusing on innovations within their educational systems, similarities and differences across institutional structures, and their broader contributions to global knowledge and society. Special emphasis is placed on the development of material and technical infrastructure, the scope of scientific research, international collaboration networks, and the implementation of scholarship and grant programs. These initiatives are shown to play a crucial role in enhancing teaching quality and shaping research with contemporary relevance. The study highlights that such universities hold a significant position not only within their national frameworks but also in the scientific, economic, social, and cultural development of the wider world. Attention is further given to the historical trajectories and development paths of these institutions, underlining the importance of both scientific-technological progress and the human factor in shaping modern universities. The article also addresses the question of "What constitutes an Innovative and Entrepreneurial University?", evaluating the role of universities in knowledge production and applied research. Finally, the study discusses the implementation of entrepreneurial functions in Azerbaijani and other post-Soviet higher education institutions, identifying existing progress as well as limitations, and analyzing the underlying causes and consequences.

Citation. Mikayilli B. (2025). Universities and the Contemporary Educational Environment in Developed Countries: Comparative Analysis of Institutional Innovation, Entrepreneurial Functions, and International Research Collaboration in Germany, Poland, and the Czech Republic. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 450–465. https://doi.org/10.56352/sei/8.11.34

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 08.04.2025 | Accepted: 21.08.2025 | Published: 02.09.2025 (available online)

Introduction

During my visits to higher education institutions in Germany, Poland, the Czech Republic, and Russia, I observed that these universities have successfully integrated the latest technologies, innovative teaching models,

and modern methodological approaches into their academic processes. The effective use of material and technical resources, coupled with highly qualified academic staff, has significantly contributed to the enhancement of teaching quality and the preparation of professional specialists.

State-of-the-art laboratories and equipment at these universities reflect continuous modernization in line with global demands. Particularly within medical faculties, laboratories resemble research-production complexes. For instance, the pharmaceutical products developed at institutions such as Jagiellonian University in Krakow, Heinrich Heine University in Düsseldorf, Humboldt University of Berlin, the Technical University of Berlin, and Charles University in Prague are widely recognized as among the highest-quality medicines worldwide. These drugs are often created, tested, and refined within university laboratories before being distributed internationally, bringing academic, economic, and social benefits not only to the universities themselves but also to broader societies (Stopka; Tijsen, 2006).

Furthermore, these universities support research projects that aim to improve living standards, ensure public health, and safeguard environmental sustainability. The underlying principle is clear: qualified personnel, knowledgeable scientists, creative specialists, and advanced technology collectively foster an effective academic and research environment. Such an environment produces both capable graduates and high-quality products, contributing directly to the wellbeing of society.

Another notable observation is the significant investment of grant funding into research projects, awarded to individuals with the intellectual and academic capacity to engage in advanced scientific inquiry. Research in these institutions is conducted with cutting-edge equipment and resources, ensuring quality and reliability. Importantly, strong collaboration networks exist not only among university staff but also between universities and research centers across the globe, as well as with industrial partners.

These dynamics expand the scope of universities far beyond teaching and research, embedding them within innovation systems, entrepreneurial activities, and global knowledge networks. Integration of education, science, and innovation, alongside international partnerships, social cooperation with organizations, and the creation of business links, forms the foundation of an innovative and entrepreneurial university environment.

Collaboration with 405 Scientific Organizations Worldwide: The Case of Jagiellonian University

Jagiellonian University in Poland actively collaborates with nearly 400 of the world's leading higher education institutions, positioning itself among the top-ranked universities globally. Established on May 12, 1364, by the decree of King Casimir the Great, the university initially comprised three faculties—liberal arts, medicine, and law. However, the law faculty faced difficulties in maintaining stable activity, and following the king's death, the university temporarily ceased operations.

Polish scholars, recognizing the indispensable value of science and education, persistently sought to revive the institution. Their efforts were realized on July 26, 1400, when King Władysław II Jagiełło ordered its reopening, with the addition of a theology faculty. In the 15th century, faculties of law and philosophy were also established, marking what is often described as the university's golden era. During this period, Jagiellonian became a flourishing academic hub that attracted students from across Europe, including Russians, Lithuanians, Hungarians, Germans, English, Dutch, Czechs, Swedes, French, Italians, Spaniards, and Turks. This diversity reflects the university's long-standing role as a center of knowledge meeting the intellectual demands of its time (Graham; Lankin et al. 2011)

From its earliest years, Jagiellonian was recognized as a leading institution for the study of law, mathematics, and astronomy—fields highly relevant during the Middle Ages. These academic achievements contributed to the training of distinguished scholars and specialists who significantly influenced European intellectual life.

Today, Jagiellonian University continues to rank among the world's best institutions, as confirmed by its placement in the Shanghai Rankings and the *Times Higher Education Supplement* (QS World University

Rankings). In addition to being a center for advanced research, the university prioritizes international academic cooperation, student exchange, and scholarship programs. At present, over 130 projects and programs are active, involving partnerships with 405 research organizations worldwide. These collaborations foster fundamental research, strengthen global academic networks, and enhance the university's capacity for scientific innovation (EC-2010)

Jagiellonian University's Scholarship Programs: How Do They Shape the Advancement of Science?

Scholarships for students form a central component of Jagiellonian University's mission. These funds operate under various titles, supported by diverse sources, including private donations and institutional endowments. For instance, the **Private Scholarship Fund**, established between 1999 and 2002 at the initiative of the university's rector, originally relied on contributions from organizations and individuals seeking to support the development of science in Poland. Over time, its scope expanded significantly.

Among the most notable initiatives is the **Queen Jadwiga Fund**, which provides financial support to students and researchers from Central and Eastern Europe. Queen Jadwiga, renowned for her philanthropy, dedicated her personal wealth to advancing education and scholarship at Jagiellonian University and in Poland more broadly. The fund was designed to strengthen international academic ties and promote scholarly exchange across Eastern and Southern Europe. Supported through both individual and corporate donations, the fund accumulated substantial "iron capital," ensuring its sustainability regardless of future levels of investment.

Another example is the **Bogdan Łysiak Scholarship Fund**, created from a donation by his daughters, Lidia Proczyk and Anna Łysiak. It aims to provide financial assistance to outstanding students specializing in Ukrainian philology within the Faculty of Philology. The scholarship is awarded annually for a period of ten months, with applications accepted each spring semester (Golubev, 2010).

The **Ad Polonos Scholarship Fund**, established in the autumn of 2016, was founded through the contribution of Professor Urszula Marty Doleżal to honor the memory of her late husband, Professor Marian Doleżal. Its mission is to support the education of young people of Polish descent, particularly those whose families suffered displacement. The fund provides financial assistance to students of Polish origin from Belarus, Georgia, Kazakhstan, Lithuania, Russia, and Ukraine who are pursuing degrees at Jagiellonian. Scholarships are granted for a ten-month period.

In addition, the university offers **PhD scholarships**, typically lasting one year, to enable doctoral students to conduct more effective and impactful research. Depending on the progress and outcomes of the candidate's work, the scholarship may be renewed. Applications are accepted throughout the academic year.

The prestigious **Rector's Scholarship** was created for outstanding graduates of bachelor's and master's programs at Jagiellonian University. Selection criteria include high **GPA (Grade Point Average)** scores as well as exceptional achievements in science, the arts, or sports. This scholarship is designed to support talented graduates in their early careers but may also be granted to current students under exceptional circumstances. Students holding a "Polish Card" (Karta Polaka) are also eligible to apply (Grudzinskiy, 2004).

These diverse scholarship programs reflect a broader European academic culture, where investments in science and education are designed to be sustainable and impactful. Initiatives are carefully structured to ensure continuity, often expanding beyond their original scope to include additional institutions, countries, and partners. Importantly, the primary aim is not immediate financial profit but rather the advancement of education, scientific research, and social development.

German Universities: Distinctive Features

Among Europe's highest-ranked institutions, **Berlin Technical University**, **Humboldt University of Berlin**, and **Heinrich Heine University Düsseldorf** hold prominent positions. A defining characteristic of technologically

advanced, so-called "innovative countries" is their commitment to substantial investment in science and education. Germany stands at the forefront of this group, with approximately 30 universities listed among Europe's most innovative institutions (Grudzinskiy, 2004).

Germany's higher education system is distinctive for its classification of institutions into several types, a structure not commonly replicated elsewhere. These include:

- **Hochschule** – Institutions with a focus on the humanities.
- **Fachhochschule** – Universities of applied sciences, specializing in practical disciplines such as engineering, business administration, design, and social sciences. These typically offer four-year programs, including two semesters of industrial practice.
- **Universität** – Comprehensive universities with broader academic scope, offering nearly 400 subjects across disciplines such as medicine, law, engineering, natural sciences, theology, economics, sociology, and agricultural studies. Universities integrate both **fundamental and applied research**, enabling students to specialize across a wide spectrum of scientific fields (Peterkova, et al. 2022).
- **Technische Universität** – Technical universities specializing in engineering and the natural sciences. For example, **Berlin Technical University** conducts advanced theoretical and applied research in physics, chemistry, mechanical engineering, electronics, metallurgy, and related disciplines.

Alongside these categories, Germany also maintains specialized institutions in pedagogy, theology, fine arts, music, and film studies.

German higher education is organized into **three cycles**:

1. **Bachelor's degree (B.A., B.Sc., B.Eng.)** – typically 3–4 years, with *Fachhochschule* programs requiring four years plus industrial practice and a final thesis.
2. **Master's degree (M.A., M.Sc., M.Eng.)** – lasting 1–4 years, strongly research-oriented and culminating in a thesis and state examination.
3. **Doctoral degree (Ph.D.)** – requiring 2–5 years, depending on the complexity of the research. Students independently select their supervisors, who then define suitable research topics. German universities' strong research infrastructure, material resources, and grant-based project funding provide favorable conditions for doctoral research.

This system not only ensures academic rigor but also encourages intellectual autonomy, allowing students to navigate their own academic trajectories (Asadov. 2021).

Humboldt University of Berlin: A Model of Modern Higher Education

Founded in 1809 by **Wilhelm von Humboldt**, philologist, philosopher, statesman, and diplomat, Humboldt University is one of Germany's most historically significant academic institutions. Currently, it hosts students from over 100 countries. Over its **210-year history**, the university has produced an exceptional roster of scholars and cultural figures, including **Johann Gottlieb Fichte** (its first rector), **Friedrich Schleiermacher**, **Georg Wilhelm Friedrich Hegel**, **Arthur Schopenhauer**, **Albert Einstein**, **Max Planck**, **Karl Marx**, **Friedrich Engels**, **Heinrich Heine**, **Otto von Bismarck**, and **Robert Schumann**.

Initially established with faculties of law, medicine, theology, and philosophy, the university admitted 256 students in its first year, taught by 52 professors. Within a short time, it developed extensive campuses, natural science centers, and a medical campus. By the early 20th century, Humboldt had emerged as a hub of intellectual and scientific progress (Sidorova, 2014).

However, the university's history also reflects the turbulence of Germany's political landscape. During the **Nazi era**, Humboldt University suffered significant setbacks: thousands of books from its library were burned, approximately 250 Jewish professors were dismissed, and many other scholars critical of the regime were

expelled. The war years left parts of the campus destroyed, and the university was temporarily closed. Today, the **memorial at Bebelplatz**, symbolized by empty bookshelves, commemorates this tragic period.

The **Humboldtian Model of Higher Education** emerged in the early 19th century, reshaping universities worldwide. This model rested on three core principles:

1. **Unity of teaching and research** – universities should simultaneously cultivate knowledge and advance scholarship.
2. **Academic freedom** – both faculty and students must enjoy autonomy in research and teaching.
3. **Cultural mission** – universities should contribute not only to professional training but also to national intellectual and cultural development.

This model profoundly influenced the development of higher education across Europe and North America. American reformers such as **Daniel Coit Gilman** drew inspiration from Humboldt, advocating for research-based graduate education in the United States, particularly in medicine and history. Similarly, the model impacted the evolution of French, Russian, and British universities [Nalëtova, 2005].

Philosophical underpinnings of this model were rooted in German classical philosophy, particularly the works of **Immanuel Kant**, **Fichte**, **Schelling**, and **Schleiermacher**. By synthesizing their ideas, Humboldt articulated a vision of the university as both a cultural institution and a research center. This framework not only shaped German education but also provided a **prototype for the modern research university** globally.

As Schwedelbach (2002) argues, Humboldt envisioned universities as institutions serving **three essential functions**:

1. To operate as centers of professional training, culture, and research.
2. To remain at the forefront of intellectual achievement.
3. To contribute directly to national development.

Thus, Humboldt University is more than an academic institution; it represents a foundational **paradigm in the global history of higher education**, bridging cultural, intellectual, and scientific progress.

Transformation of the Humboldt University Model

At the turn of the 20th to the 21st century, the **Humboldt University model** continued to evolve in response to new global challenges. This transformation enabled the expansion of higher education from an **elitist system to mass education**, and from mass education to universal accessibility. As a result, universities diversified their functions and developed into comprehensive academic, research, and production structures. The adaptation of the Humboldt model to modern conditions has increased the role of universities in **socio-economic development, social mobility, and the resolution of global challenges** [Vasilenok & Shapiro, 2004].

Following World War II, the **University of Berlin** reopened in 1946. Much like the city itself, the university reflected the political division of Germany: in the Federal Republic, it became known as the **Free University of Berlin**, while in the German Democratic Republic, it continued as the **University of Berlin**, renamed in 1949 as **Humboldt University of Berlin**. Despite ideological constraints under the Socialist Party, from the 1970s the institution reestablished **international cooperation** with leading universities across Western Europe, Asia, Africa, and Latin America. After German reunification, extensive reforms were introduced: much of the faculty was replaced with specialists from West Germany, and significant investments were made to modernize the university's infrastructure and strengthen its scientific potential.

Today, Humboldt University functions as a **global research center**, attracting students and scholars from across Europe and the wider world. It provides opportunities for both **theoretical and practical education**, enabling students to pursue careers as specialists and researchers. Its academic ecosystem is enriched by collaborations

with multinational corporations, research institutes, and clinical facilities. Of particular note is **Charité – Universitätsmedizin Berlin**, one of Europe's largest and most advanced university hospitals, operating under the auspices of Humboldt University.

Currently, the university encompasses **11 faculties and 261 academic programs**. Examples include:

- **Agriculture and Horticulture Faculty**: horticultural sciences, agrarian economics, fisheries and aquaculture, soil nitrogen research.
- **Law Faculty**: bachelor's, master's, and doctoral programs covering German and European law, political science, and intellectual property law.
- **Economics Faculty**: economics and statistics, corporate finance, financial engineering, applied economics.
- **Mathematics and Natural Sciences Faculties (I and II)**: the first focuses on chemistry, physics, and biology; the second on psychology, mathematics, geography, and computer sciences.
- **Philosophy Faculties (I–IV)**: covering history, computer science, European ethnology, German literature, classical philology, social sciences, cultural studies, art history, health sciences, pedagogy, and rehabilitation.
- **Theology Faculty**: ancient and modern languages, history, philosophy, and psychology of religion.
- **Medicine Faculty**: operating within Charité Medical Center, offering cutting-edge research and clinical training.

Charité, founded in 1710 during a plague outbreak, has since grown into Europe's largest and most renowned university hospital, encompassing **four major campuses in Berlin**. Its guiding motto—**"Research, Teach, Heal, Help"**—reflects its mission. The hospital is a pioneer in **minimally invasive surgery**, employing advanced technologies such as the **Da Vinci robotic surgical system**.

Internationalization and Dual-Degree Programs

One of Humboldt University's notable innovations is its **dual-degree programs**, which foster academic mobility and expand students' intellectual horizons. These programs are offered in collaboration with prestigious global universities, including **King's College London, University of Bologna, University College Dublin, University of Vienna, Tallinn University, Université Paris Diderot (Paris 7), University of Rome III, University of Rome Tor Vergata, Complutense University of Madrid, Charles University in Prague, University of Washington, and the University of North Carolina at Chapel Hill**.

Humboldt also participates in **student exchange and internship programs**, offering placements at leading universities such as the **National University of Singapore, University of São Paulo, University of Toronto, Uppsala University, University of Queensland, University of Zurich, Princeton University, Waseda University, and Stellenbosch University**. In addition, it is a partner in the **Erasmus Mundus program**, which provides international mobility opportunities for both study and internships.

Scholarship and Grant Programs

Humboldt University offers an extensive range of **scholarships and grants** designed to support academically talented and active students, particularly at the master's, doctoral, and postdoctoral levels. Selected programs include:

- **Humboldt Post-Doc Scholarships** – for doctoral graduates wishing to continue research at the university. Duration: 6 months, with a stipend of €1,500 per month and coverage of travel expenses.
- **International Research Awards (for women)** – targeted at female doctoral students. Duration: 6 months, with a stipend of €1,750 per month.

- **Caroline von Humboldt Programme (for women)** – supports doctoral candidates on maternity or childcare leave. Provides €1,365 per month plus €400 for childcare.
- **Rosa-Luxemburg-Stiftung Scholarships** – awarded annually to 150 active students promoting democratic values, gender equality, and social justice. Each recipient receives €750 per month.

Berlin Technical University

Another prominent institution is the **Berlin Technical University (Technische Universität Berlin, TU Berlin)**, unique in Germany as a technical university that also integrates **humanities and social sciences**. TU Berlin offers strong programs in **sociology, chemical engineering, biology, and business administration**, and enjoys an excellent reputation in the labor market. Statistics indicate that most graduates secure employment in their field within one year, making TU Berlin a strategic choice for students aspiring to careers in European industries.

The university conducts advanced research in **civil engineering, computer science, and programming**, and collaborates with major German corporations such as **Deutsche Telekom, Siemens, Bosch, and Daimler**, which often co-finance large-scale research projects. TU Berlin also serves as a **training hub for multinational corporations** across Germany, France, Italy, and beyond, preparing highly qualified specialists in mechanical engineering, industrial management, and information technologies.

Its alumni include distinguished Nobel laureates and pioneers of science and technology, such as **Gustav Hertz**, **Konrad Zuse** (inventor of the first programmable computer and high-level programming language in 1941–1948), **Karl Bosch**, **Gerhard Ertl**, **Eugene Wigner**, **Dennis Gabor**, and **Werner von Braun** (designer of the first ballistic missiles and later a key architect of NASA's rocket programs). In architecture, **Bruno Taut**, a leading figure of modernism and the "New Objectivity" movement, is among its notable graduates; many of his buildings were later recognized as UNESCO World Heritage Sites.

In total, TU Berlin counts **10 Nobel laureates and 2 national prize winners** among its alumni, underscoring its reputation as one of Europe's leading centers of engineering and innovation.

Berlin Technical University: Research and Academic Profile

Berlin Technical University (TU Berlin) offers **over 100 academic programs** at the bachelor's, master's, and doctoral levels. Through agreements with **26 universities worldwide**, graduates may obtain dual degrees. The university hosts **40 research institutes** engaged in fundamental scientific investigations.

Currently, TU Berlin conducts **large-scale international research** in areas such as **cyber-physical systems, energy, rational use of resources, ecology, design, development of new materials, and optimization of production processes**. Overall, the university participates in **120 major international projects**, while faculty members contribute to **1,500 scientific studies** annually. Professors and students also engage in at least **40 scientific, startup, and spinoff initiatives each year**.

Several **master's programs in English** are available, requiring minimum admission scores of **IELTS 6.5, TOEFL 88, or CAE grade C**.

The structure of TU Berlin's faculties reflects its mission to integrate **science and practice**. Since its renaming in 1946, the university has pursued a dual focus on **technical and humanistic disciplines**.

- **Faculty I: Humanities and Educational Sciences** – established to balance technical training with the humanities, supporting interdisciplinary research in social sciences, natural sciences, and engineering.
- **Faculty II: Mathematics and Natural Sciences** – covering mathematics, physics, and chemistry, including traditional mathematics as well as technical and business mathematics.

- **Faculty III: Process Sciences** – internationally recognized for innovative approaches to education and research. Its mission is to enhance students' research capacity by combining **practical training, creativity, and industry applications**. Faculty III plays a central role in shaping Berlin's scientific agenda and research strategy.

Heinrich Heine University Düsseldorf

Founded in **1965**, Heinrich Heine University Düsseldorf (HHU) has grown into a prominent **research university** with a **network of campuses, clinics, laboratories, specialized libraries, and research centers**. Approximately **35,000 students** are enrolled. Established on the basis of the Düsseldorf Medical Academy, the university maintains a strong focus on research-led teaching.

HHU comprises faculties of **Law; Mathematics and Natural Sciences; Medicine; Arts and Humanities; Business Administration and Economics**.

The **Faculty of Medicine**, originally founded in 1907 as the Academy of Applied Medicine, is the university's historic core. It quickly achieved international recognition through fundamental research and clinical practice. Today it includes **31 institutes, 30 clinics, and two central facilities** (an animal research center and a biomedical research center). The faculty collaborates closely with specialized institutes such as the **Leibniz Institute for Diabetes Research** and the **Institute for Environmental Hygiene Research**. Research areas span **hepatology, cardiovascular diseases, ecological medicine, gerontology, neuroscience, and molecular biology**. Its clinics serve nearly **200,000 patients annually** with state-of-the-art medical equipment and laboratories.

HHU is a major participant in **Erasmus Mundus** and other European-funded programs. Numerous grant schemes support scientific activity, including **Family Mobility Grants (FMG), Partnership Mobility Grants (PMG), Social Development Mobility Grants (SCMG), and High-Potential Mobility Grants (HPMG)**.

The **Heine Research Academies** provide structured training and career development for young researchers. These include:

- **iGRAD** – the Interdisciplinary Graduate and Research Academy, founded in 2008 within the Faculty of Mathematics and Natural Sciences.
- **medRSD** – the Medical Research School Düsseldorf.
- **PhilGRAD** – the Graduate Academy of the Faculty of Philosophy.
- **Young Academics and International Research Centers** – coordinating interdisciplinary initiatives.

The **Walter Benjamin Program** supports early-career researchers pursuing independent studies after completing their doctorate. Other competitive programs include the **European Research Council (ERC), Emmy Noether Programme, Heisenberg Programme, Liebig Fellowship (Chemical Industry Fund), Volkswagen Foundation initiatives, and German cancer research networks**.

The **Junior Scientist and International Research Center (JUNO)** further these aims by fostering **academic career development and international collaboration**. JUNO seminars prepare students for research careers and facilitate cooperation with international scholars (EC-2010).

In 2018, the university established the **Strategic Research Fund** to enhance its research profile, competitiveness, and innovation capacity. The fund supports (1) young researchers' projects, (2) large-scale collaborations, and (3) rector-approved strategic initiatives. Importantly, from the **first year of study**, students are introduced to research activities, scholarship opportunities, and study-abroad programs—creating an environment for early talent development.

Although HHU is a **state university**, it also welcomes contributions from private benefactors committed to supporting science and education. Its research funding priorities are:

1. Investing in scientific progress as a foundation for the future.
2. Strengthening Düsseldorf's regional role.
3. Promoting participation in international research and exchange programs.
4. Supporting young talents in scientific research and professional development.
5. Expanding university–civil society engagement.

Charles University, Prague: Internationalization Strategy

Founded in **1348** by Emperor Charles IV, **Charles University** in Prague (also known as Karlova University) is one of Europe's oldest and most prestigious centers of learning. Created with the counsel of Archbishop Arnošt of Pardubice, the institution—sometimes referred to as the "Imperial University"—emerged during a period marked by crusades and the influence of the Holy Roman Empire.

The university has hosted many notable figures, including **Jan Hus (Czech national hero), Albert Einstein, Nikola Tesla**, and writers such as **Milan Kundera**. **Franz Kafka** completed his doctoral studies in law here under Alfred Weber's supervision.

Today, Charles University ranks among the **world's leading research universities**, known for the quality and relevance of its scientific output, participation in **international projects**, membership in global networks, and extensive involvement in **summer schools, conferences, and exchange programs**.

According to *Times Higher Education World University Rankings*, Charles University is consistently placed among the **top 500 universities worldwide**. In the **Shanghai Ranking (ARWU)**, it holds a position around the **top 200 globally**, ranking **7th among European universities** and **1st in Erasmus Mundus student participation**.

Table 1. Foundations of the Functioning of an Innovative University

Role of Secondary School	Role of University	Role of Industry	Role of the State	Role of NGOs
1. Systematic organization of career-oriented activities in schools. 2. Development of intensive, scientifically grounded cooperation between secondary schools and universities.	1. Organization of innovative activity directions. 2. Conduct of intensive scientific research. 3. Identification of new research areas. 4. Establishment of research structures. 5. Creation of production enterprises. 6. Expansion of international cooperation. 7. Analysis of global political and economic development dynamics. 8. Establishment of techno-parks. 9. Organization of laboratories equipped with modern technologies. 10. Study of the socio-economic demands of	1. Presentation of new projects to universities. 2. Support for equipping universities' material-technical base with modern technologies. 3. Support for establishing cooperation between universities and local/foreign companies. 4. Provision of conditions for practical training and research. 5. Establishment of business accelerators. 6. Establishment of business incubators.	1. Coordination of activities between the Ministry of Education and the Ministry of Economic Development. 2. Allocation of grants and funding programs to universities. 3. Provision of grants for start-up projects. 4. Allocation of preferential loans to projects transforming into businesses.	1. Implementation of joint projects with universities. 2. Conduct of public awareness campaigns. 3. Organization of social surveys.

	society. 11. Ensuring sufficient autonomy for universities. 12. Provision of highly qualified academic staff. 13. Allocation of financial resources for scientific research. 14. Establishment of science–production departments. 15. Development of infrastructure for an innovative environment.			

Internationalization and Academic Structure of Charles University

One of the key directions of Charles University's international engagement is **student and faculty mobility**, including **dual-degree programs**. The university is recognized among Europe's leading institutions for the high quality of its participation in the **Erasmus Mundus program**. At present, Charles University cooperates with more than **200 prestigious universities worldwide**.

Doctoral students also have the opportunity to participate in the **Cotutelle program**, which allows them to conduct research under the joint supervision of two academic advisors. Upon successful defense, graduates receive diplomas from both Charles University and the partner institution. These programs enable students to pursue research in foreign universities and scientific centers.

Currently, Charles University enrolls **nearly 50,000 students**, including around **7,000 international students**. The university consists of **17 faculties, research institutes, teaching centers, and supporting organizations**. The university is governed by the **Rector**, while faculties are headed by **Deans**. Education is offered at the **bachelor's, master's, and doctoral levels**. Charles University is a member of the **European University Association**, alongside Oxford, Sorbonne, Bologna, and Geneva.

- The **Faculty of Catholic Theology**, active since 1348, teaches the history of art and theology.
- The **Faculty of Protestant Theology** prepares students for service in religious and social institutions.
- The **Faculty of Hussite Theology**, established in 1920, focuses on Hussite doctrine, its religious and social dimensions.
- The **Faculty of Law**, one of the oldest, has educated prominent legal and political figures in Czech public life. Teaching is offered only full-time, lasting **five years** and leading directly to a **master's degree**.

Charles University has a particularly rich tradition in **medical education**, with **six faculties of medicine**:

- The **First Faculty of Medicine** (founded in 1215) is one of the oldest centers of medical education in Europe, specializing in physical therapy, intensive care, and dietetics.
- The **Second Faculty of Medicine** focuses on pediatrics.
- The **Third Faculty of Medicine** offers comprehensive training across all medical disciplines, supported by an extensive network of Czech hospitals, institutes, and clinics. It also includes a **Department of Public Health**.
- The **Plzeň Faculty of Medicine** provides master's and doctoral programs.
- The **Hradec Králové Faculty of Medicine** specializes in pharmacy.

The university has gained **global recognition** for research in fields such as **Egyptology, addictology, and criminology**.

The **Faculty of Philosophy** is among the most popular, hosting more than **8,000 students**, many of them international. Lectures are frequently delivered by world-renowned scholars.

Across its **17 faculties**, Charles University offers over **300 accredited programs** at the bachelor's and master's levels, spanning **642 specializations**. Most faculties include affiliated **institutes, research groups, and preparatory courses**.

The **Faculty of Education** reflects distinctive features of Czech teacher training, where students usually specialize in **two teaching subjects** (e.g., English and mathematics; chemistry and biology; history and literature). The faculty offers broad specialization options, including **psychology, pedagogy, and special education**. Admission involves both **tests and interviews**, with oral interviews assessing applicants' motivation and aptitude. For foreign students, a Czech language certificate is not required. The psychology program requires a **written test**, based partly on recommended literature; approximately **15% of the questions are in English**, requiring at least **B2-level proficiency**.

Charles University is also home to numerous specialized **research centers**, including the **Institute of History and Archives, Center for Theoretical Studies, Center for Economic Research and Postgraduate Education, Environmental Center, Computer Science Center, School for Knowledge and Technology Transfer, Institute of Linguistic Studies, Institute of Political Science and International Relations, Institute of Sociology, Institute of Communication and Journalism, European Information Center, and Ecology Center**. Together with its central library, these institutions significantly enhance the university's standing among Europe's top research universities. Their overarching aim is to strengthen Charles University's role as a **research hub**, expand **university–society relations**, and ensure the regular dissemination of research in **scientometric databases**.

The Entrepreneurial and Innovative University Model

The universities examined in this study share a commitment to **innovation** and to the principles of the **"entrepreneurial university."** As innovative institutions, they contribute to the development of **human capital, science and technology, industry, and agriculture**, thus playing a decisive role in the intellectual and economic progress of their respective countries.

Switzerland exemplifies this model. According to *Reuters World's Most Innovative Universities*, the country invests approximately **16 billion Swiss francs annually** in science, education, technology, and innovation. The **Swiss Federal Institute of Technology in Zurich (ETH Zurich)** embodies this strategy. In 1936, its president Arthur Rohn introduced the **"Innovation Policy Program"**, which laid the groundwork for the creation of the **Swiss National Science Foundation in 1942**. ETH Zurich counts **21 Nobel laureates** among its alumni and faculty.

In the past decade, ETH has consistently ranked among the **top five European technical universities** and among the **world's leading institutions**. Its graduates rarely face difficulties finding employment in their fields, reflecting the university's reputation for professional excellence. ETH Zurich's relatively **low tuition fees**, coupled with its heavy investment in **education, teaching quality, and scientific research**, ensure that resources are effectively allocated. Crucially, ETH promotes not only research and teaching but also the **integration of science into industry**, thereby advancing the modern model of the entrepreneurial university. One key indicator of success in this regard is **Industry Income**, representing revenue from non-governmental research and discovery transferred to the commercial sector.

A similar trajectory can be observed at the **Tambov State University named after G.R. Derzhavin (Russia)**, where the shift toward an **innovative education-research model** began in the early 2000s. Its **development strategy** includes:

- Optimizing innovation and investment activity as a factor in regional development.
- Strengthening orientation toward civil society.

- Establishing **innovation technoparks** that integrate education, research, production, and social infrastructure.
- Building the university's **competitive brand**.
- Promoting a **corporate academic culture**.
- Improving education quality and ensuring competitiveness of research.
- Enhancing the university's position in the **international education and research space**.
- Improving living and working conditions for staff and students, including housing provision.
- Expanding the university's role as a **regional ideological and cultural center**.
- Promoting **public education and outreach**.
- Advancing **practice-based education**.

The university's development plan clearly reflects its adoption of **innovation as a core principle**, aligning all activities with the **dynamic needs of modern society**.

As **S.B. Abdygapparova (2010)** notes, the potential for innovative activity in a university must be evaluated through **comprehensive economic analysis**. This involves assessing the university's:

- overall economic performance,
- efficiency of resource use,
- labor and wage structures,
- student performance indicators,
- profitability and revenue,
- financial stability and working capital,
- and effectiveness of economic incentives.

Such an analysis identifies whether sufficient foundations exist for innovative development, and if so, helps determine the scope of **future investment** in university innovation. This approach also supports the creation of a **national innovation ecosystem** and the mobilization of **state innovation resources**.

One of the key factors in the implementation of innovative activities in universities is the scientific personnel potential. This is essential, since it is the staff who regulate and carry out innovation. At the current stage of scientific and technological progress, possessing knowledge alone is not sufficient for academic staff. They must also be able to apply the latest advances in technology to the teaching process, stimulate students' interest, and foster enthusiasm for their chosen field. University personnel are expected to demonstrate flexible thinking, analytical skills, and the ability to make prompt decisions. At the same time, the university must take responsibility for the continuous professional development of its staff.

The creation of an effective management system constitutes a decisive step towards building an innovative university. Such a system, by incorporating science–industry–business relations, paves the way for the establishment of an innovation-friendly environment (Bunyak, 2016). Leaders of universities who seek efficiency in specialist training, research activities, and high-quality production increasingly aim to adopt the globally expanding "entrepreneurial university" model. The integration of entrepreneurial university features into modern higher education institutions represents a major step forward in the pursuit of innovation.

Within this model, the achievement of high results in personnel training is only part of the process. The primary goal is to promote collaboration with industrial enterprises and large corporations, thereby ensuring the commercialization of scientific research. The research activity envisaged in entrepreneurial universities is expected to meet the demands of industry. This concept was initially articulated in the mid-1990s in the works of American scholars B.R. Clark and Peter Drucker, and subsequently developed further by European, Russian, and Ukrainian researchers. The Massachusetts Institute of Technology (MIT), Stanford University, New York University, and a number of European institutions—including those examined in this study—are often cited as classical examples of entrepreneurial universities.

Clark's longitudinal research on five European universities over a ten-year period demonstrated that the entrepreneurial university model constitutes their path towards innovation (Clark, 2011). Adoption of this concept by a university implies readiness for fundamental institutional change. Importantly, Clark emphasized that universities can embrace the entrepreneurial model without compromising their traditional academic values.

According to Professor A.O. Grudzinskiy, Doctor of Sociological Sciences, entrepreneurial universities are systematically engaged in creating knowledge, delivering education, and translating this knowledge into practice. He characterizes entrepreneurial universities as institutions that:

1. Operate with innovation as their central goal, capable of functioning under conditions of risk and dynamic demand.
2. Are economically efficient, primarily relying on their own resources.
3. Possess a flexible and network-based organizational structure.
4. Derive balanced benefits from the skills and risk-taking capacities of individuals and groups.
5. Focus not on controlling or monitoring staff activities, but on fostering an environment that supports the institution's strategic mission.
6. Demonstrate adaptability to changing consumer demands and provide rapid responses (Grudzinskiy, 2004).

In Clark's (2011) view, the transformation of universities into entrepreneurial institutions requires at least five essential elements:

- a strengthened steering core;
- an expanded developmental periphery;
- a diversified funding base;
- a stimulated academic heartland;
- an integrated entrepreneurial culture.

These elements are central to the operational strategies of the universities analyzed in this study. Russian scholars A. Sidorova and N.A. Rumyantsev argue that entrepreneurial universities serve as research centers which, in addition to fulfilling the traditional functions of education and science, effectively transfer knowledge to the practical domains of the economy and society (Zimmermannová, et al. 2022).

S.V. Golubev, in his research, highlights the social mission of entrepreneurial universities, examining their operations through the lens of social entrepreneurship. He stresses that the primary responsibility of such universities lies in the broad implementation of innovative educational programs and the creation of entrepreneurial ecosystems within their respective regions (Golubev, 2004). J. Ropkey adds that entrepreneurial universities must display entrepreneurial behavior institutionally, while also embedding this mindset conceptually (Ropkey, 2004).

Ukrainian scholar N.M. Bunyak (2016) argues that analysis of different approaches to defining the essence of the entrepreneurial university supports the conclusion that its entrepreneurial function is often associated with the commercialization of research outcomes. According to him, entrepreneurial universities:

- diversify their sources of funding;
- reduce institutional dependence on public and governmental structures;
- train specialists with creative thinking capable of implementing innovative projects across different fields;
- generate new knowledge and ensure its capitalization.

Such institutions are characterized by organizational flexibility that allows them to adapt quickly to changing societal and market needs. They actively promote the establishment of new enterprises by faculty and students to commercialize research outcomes, facilitate the entire cycle of knowledge creation—from idea generation to

prototyping innovations—and encourage the integration of education, science, and business. Collectively, these features contribute to the creation of initial conditions necessary for the innovative development of the national economy (Bunyak, 2016).

Conclusion

Although some efforts have been made in contemporary Azerbaijan and in universities of the former Soviet republics to implement entrepreneurial functions, these initiatives have not yet been fully realized across a wide spectrum. Several factors contribute to this. Most universities prioritize personnel training over research activities, often concluding the process solely with teaching, without encouraging students to engage in scientific and creative work. This trend is particularly evident in state universities. Another challenge is the underdevelopment of an innovative educational and work environment. Factors hindering progress include insufficient connections between universities and business structures, corporations, leading global universities, research centers, and society at large.

The absence of an entrepreneurial culture and the lack of entrepreneurial experience among faculty further hinder the emergence of an entrepreneurial university tradition in the post-Soviet space. Consequently, students often become passive, focusing solely on obtaining their diplomas and securing employment, rather than keeping pace with the modern trends in industrial development, technology, and science. Personnel who do not meet the demands of the contemporary world cannot contribute to the advancement of science, industry, or technology.

The entrepreneurial university integrates teaching, research, and entrepreneurial activities, generating revenue from these functions while also serving as a critical participant in the country's innovation processes. Such universities not only train innovative-minded specialists for various fields but also produce new knowledge and commercialize it. By providing students with deep theoretical knowledge alongside the development of fundamental research skills, intellectual stimulation through teaching and research, and opportunities to acquire practical skills aligned with personal professional needs, universities actively prepare graduates for the workforce. In other words, the university participates directly in innovation activities and scientific production at both macro and micro levels.

The entrepreneurial university pursues two key objectives:

1. To train specialists for students wishing to establish their own businesses, offering and implementing entrepreneurship programs that develop students' entrepreneurial mindset.
2. To engage students and graduates in entrepreneurial activities through the establishment of business incubators, technology parks, and similar initiatives, thereby assisting them in founding their own companies and functioning as an entrepreneurial institution.

In the universities examined in this study, these factors were identified as particularly significant. Operating at the level of contemporary demands opens pathways to innovation and lays the foundation for new prospects for these higher education institutions. The findings suggest that the entrepreneurial university not only conducts training and research in business and other socio-economic fields but also facilitates significant financial investments from large corporations and governments, and generates revenue from its own entrepreneurial activities.

The development of university entrepreneurship is supported by initiatives such as the 2003 Gelsenkirchen Institutional Entrepreneurship Declaration, which is recognized as a key step for promoting entrepreneurship education in European higher education systems. The declaration emphasizes that the entrepreneurial university concept entails appropriate institutionalization of university management structures and activities, characterized by:

- Professionalization of university management and staff, establishing strong executive leadership;
- Diversification of income sources;

- Careful attention to core academic values while studying and integrating new market management methods;
- Close engagement with the business world and society;
- Promotion of initiative and an innovative entrepreneurial culture, including knowledge transfer, establishment of new production companies, continuation of education, alumni relations, and attracting financial resources;
- Integration of academic and research divisions beyond traditional boundaries, and preparation of projects aligned with new knowledge production methods.

The realization of this concept requires scientifically grounded, forward-looking, and fundamental activity.

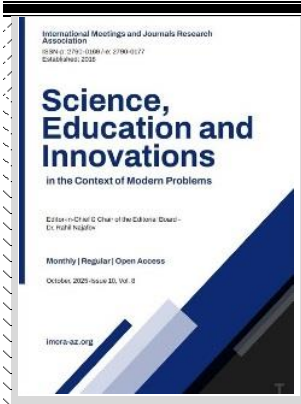
Conflict of Interest

The author declares no conflict of interest regarding the publication of this manuscript.

References

1. Ahmadov, I. (2018). Human capital as the strategic goal of developmental education. *Azerbaijan School Journal*, (2).
2. Asadov, A. (2022). Totalitarian obstacles and modern challenges in the study of world literature. *Journal of Language and Literature, 13*(1), 44–51. https://doi.org/10.5281/zenodo.6472714
3. Asadov, A. (2023). The role of world literature in the formation of students' planetary thinking (Azerbaijan case). *Науково-теоретичний альманах Грані, 26*(4), 160–166. https://doi.org/10.15421/172392
4. Asadov, A. (2024). Azerbaijani literature, literary and philosophical view from Eastern experience in the context of Western thought. *Science, Education and Innovations in the Context of Modern Problems, 6*(3–4), 68–80.
5. Asadov, A. (2025). Comparative literary pedagogy: Analyzing the presence of world literature in Azerbaijani school textbooks. *Science, Education and Innovations in the Context of Modern Problems, 8*(3), 512–527. https://doi.org/10.56334/sei/8.3.30
6. Asadov, A. A. (2021). The role of world literature in the formation of students' planetary thinking. *Laplage em Revista, 7*, 360–368.
7. Bunyak, N. (2016). Lesya Ukrainka East European National University, Ukraine: Entrepreneurial university: Essence and features of formation. *Juvenis Scientia, 13*(2).
8. Clark, B. (2011). *Creating entrepreneurial universities: Organizational pathways of transformation* (A. Smirnov, Trans.). Moscow: Higher School of Economics.
9. European Commission. (2010). Entrepreneurship in higher education, especially within non-business studies. https://ec.europa.eu/docsroom/documents/2214/attachments/1/translations/en/renditions/pdfEuropean Commission
10. European University Association. (2021). The role of universities in regional innovation ecosystems. https://www.eua.eu/images/pdf/eua_innovation_ecosystem_report.pdfeua.eu
11. Golubev, S. (2010). Socially entrepreneurial universities: Development opportunities for regional universities. *Public Sciences: All-Russian Scientific Journal*, (4), 11–21.
12. Graham, P. *America behind the school desk: How secondary schools respond to the changing needs of the nation.*
13. Grudzinskiy, A. (2004). University as an entrepreneurial organization. *Sociological Research*, (4), 113–121.
14. Kim, Y., Kim, W., & Yang, T. (2012). The effect of the triple helix system and habitat on regional entrepreneurship: Empirical evidence from the U.S. *Research Policy, 41*, 154–166.
15. Kuzmichyov, A. D. *Business education: Book novelties.* Retrieved from [file link]
16. Lankin, V., Gorelova, G., Serbin, V., Arutyunova, D., Tatarova, A., Bakanov, G., & Makarova, E. (2011). *Research and development of organizational management systems in higher education institutions.* Taganrog: TTI SFedU Press.

17. Malyavko, D., & Kolotilin, A. (2016). Innovative activities of ITMO University and their impact on import substitution and the development of the Russian economy. *Scientific Journal of ITMO University. Series: Economics and Environmental Management*, (2), St. Petersburg.
18. Mikayilli B. (2022). Preschool education: world experience – historical and modern aspect. Journal of Preschool and Primary Education, Vol. 241, Issue IV, pp. 9-35.
19. Najaf, A. N., & Najafov, R. (2025). Historical perspectives on education in medieval Azerbaijan (10th–16th centuries): Curriculum, methodology, and student mobility. *Science, Education and Innovations in the Context of Modern Problems, 8*(11), 16–33. https://doi.org/10.56352/sei/8.11.2
20. Naletova, I. (2010). Humboldt University in the dynamics of university education development
21. Naletova, V. (2005). *Research on higher education: The concept of meta-fundamentalism*. Tambov.
22. OECD. (2014). Graduate entrepreneurship in Poland. https://www.oecd.org/content/dam/oecd/en/publications/reports/2014/11/graduate-entrepreneurship-in-poland_0c5f3330/3812a064-en.pdfOECD+1
23. Pankova, N. (2016). *Innovative-type University: Complementarity of liberalism and pragmatism in education*. Tomsk.
24. Peterková, J., Czerna, K., & Zimmermannová, J. (2022). Innovation ecosystem in selected regions of the Czech Republic and Poland: Specifics of infrastructure supporting innovative entrepreneurship. *Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration*, 30(1), 1550. https://doi.org/10.46585/sp30011550ResearchGate
25. Ropke, J. (1998). *The entrepreneurial university: Innovation, academic knowledge creation, and regional development in a globalized economy*.
26. Schnedelbach, G. (2002). Humboldt University. *Logos*, (5–6).
27. Serbinovsky, B., & Egorova, L. (2009). Innovative model and integrated information environment in the management of a new-type university. Novocherkassk: YURGTU (NPI), 226. Retrieved from [file link]
28. Sidorova, A. (2014). Entrepreneurial universities in the state educational strategy. *Voprosy metodologii*, (6).
29. Stopka, K. *Collegium Maius*. Retrieved from https://en.uj.edu.pl/en_GB/about-university/faculties-and-other-units/libraries
30. Tijssen, R. J. W. (2006). Universities and industrially relevant science: Towards measurement models and indicators of entrepreneurial orientation. *Research Policy, 35*, 1570–1571.
31. Vasilenok, V., & Shapiro, N. (2004). Successful experience of innovative practices. *Scientific Journal of ITMO University. Series: Economics and Environmental Management*, (4), St. Petersburg.
32. Yuryev, V. (2008). Development of the innovative potential of the university. *TSU Bulletin*, 1(57).
33. Zimmermannová, J., Czerna, K., & Peterková, J. (2022). Entrepreneurial activities among universities in the Czech Republic. *Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration*, 30(1), 1550. https://doi.org/10.46585/sp30011550ResearchGate



Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Reality of the Quality of Pedagogical Practice in Algerian Universities and the Requirements for Its Improvement (A Field Study on a Sample of Faculty Members at Ahmed Draïa University – Adrar)

Aghiat Salima
Doctor
Development and Education Laboratory, University of Ahmed Draïa- Adrar
Algeria
E-mail: aghiatsalima@univ-adrar.edu.dz; Orcid: 0009-0006-0988-6858

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Quality, Pedagogical Practice, University, Improvement Requirements.

Abstract
This study aims to examine the current state of the quality of pedagogical practice in Algerian universities and to identify the requirements for its improvement. The research sample consisted of 65 faculty members from various disciplines. A descriptive statistical approach was adopted, and a questionnaire was designed and validated through review by a panel of experts. Reliability and suitability for application were confirmed through a pilot study.
The findings of the study revealed the following:
- The quality of pedagogical practice and the requirements for its improvement at the Faculty of Social, Human, and Islamic Sciences, Ahmed Draïa University – Adrar, were found to be at a moderate level.
- There are statistically significant differences in the requirements for implementing quality pedagogical practice at the Faculty, based on variables such as gender, age, academic qualification, rank, years of experience, and field of specialization.

Citation. Salima A. (2025). The Reality of the Quality of Pedagogical Practice in Algerian Universities and the Requirements for Its Improvement (A Field Study on a Sample of Faculty Members at Ahmed Draïa University – Adrar). *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 466–479. https://doi.org/10.56352/sei/8.11.35

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.12.2024 | Accepted: 21.072025 | Published: 02.09.2025 (available online)

Introduction:

The university is an educational and instructional institution that strives to achieve multiple objectives in the academic and research fields, granting it a vital role in scientific and technological progress through the research it produces in various disciplines. In light of the technological revolution, there has been a growing need to develop all elements of the educational system, an effort that has become a global priority.

Today, the quality of higher education stands as one of the most pressing challenges facing educational systems in developing countries. Reports from international organizations emphasize the necessity of rethinking the philosophy of university education, focusing on the establishment of enhanced standards to ensure the quality of educational outcomes (Zerqan Leila, 2012, p. 1).

The success of the educational process in achieving its goals largely depends on the quality of pedagogical practice and the instructor's mastery of diverse teaching skills in light of modern instructional roles. This contributes to raising the efficiency of the educational system and improving the quality of educational outputs.

Pedagogical practice is among the most important and effective functions of education in preparing qualified graduates, as it equips them with the necessary theoretical knowledge and practical skills. Given the significance of university teaching, many researchers have sought to identify the most effective teaching methods that university instructors can adopt. Research findings indicate that effective teaching is often accompanied by specific academic and psychological behaviors, such as the instructor's enthusiasm for teaching, breadth of knowledge, mastery of the subject matter, ability to organize and present content engagingly, clarity in delivering information, commitment to each student's cognitive and behavioral development, and capacity to motivate and gain students' trust and respect (Zerqan Leila, 2012, p. 2).

Pedagogical practice is therefore a cornerstone for enhancing teaching quality and achieving excellence in outcomes, especially amid intense competition between higher education institutions in today's era of globalization, characterized by massive knowledge and technological advances as well as diverse modern teaching approaches using information and communication technology. Consequently, higher education institutions must create the conditions to improve faculty performance through continuous assessment, enhancement, and development—efforts that positively impact the quality of the institution and its outputs.

In higher education systems, the quality of pedagogical practice is a top priority for all nations and educational institutions that award academic degrees and ranks, with the aim of producing graduates who are competitive and successful in the global job market and capable of meeting society's needs for sustainable development in all dimensions: human, social, economic, and cultural.

1. Research Problem:

Higher education institutions are placing increasing emphasis on the quality of their educational services as they face a competitive environment and rising societal demands for graduates capable of meeting local needs effectively. The quality of services provided by these institutions is reflected in the performance of their graduates in the labor market and shapes the perception of the community and employers toward the institution. Faculty members play a key role in translating institutional plans and objectives into tangible outcomes, which ultimately shape the reputation of both the graduates and the university itself.

Accordingly, there is a pressing need to develop a proposed framework for evaluating pedagogical practice within these institutions as part of their comprehensive quality management process.

This study emerged from the following main questions:

- What is the current state of the quality of pedagogical practice at the Faculty of Social, Human, and Islamic Sciences, Ahmed Draïa University – Adrar?
- Are there statistically significant differences in the requirements for implementing quality pedagogical practice at the Faculty based on gender, age, academic qualification, rank, years of experience, and field of specialization?
- From these, the following sub-questions arise:
- Are there statistically significant differences in the requirements for implementing quality pedagogical practice at the Faculty based on gender?
- Are there statistically significant differences based on age?
- Are there statistically significant differences based on academic qualification?

- Are there statistically significant differences based on academic rank?
- Are there statistically significant differences based on years of experience?
- Are there statistically significant differences based on field of specialization?

Research Hypotheses:

Based on the research problem and the preceding questions, a set of hypotheses was formulated for verification, as follows:

- The quality of pedagogical practice and the requirements for its improvement at the Faculty of Social, Human, and Islamic Sciences, Ahmed Draïa University – Adrar, are at a moderate level.
- There are statistically significant differences in the requirements for implementing quality pedagogical practice at the Faculty based on gender, age, academic qualification, rank, years of experience, and field of specialization.

From these, the following sub-hypotheses are derived:

- There are statistically significant differences in the requirements for implementing quality pedagogical practice at the Faculty based on gender.
- There are statistically significant differences based on age.
- There are statistically significant differences based on academic qualification.
- There are statistically significant differences based on academic rank.
- There are statistically significant differences based on years of experience.
- There are statistically significant differences based on field of specialization.

3. Significance of the Study:

The significance of this study can be summarized as follows:

- It addresses the topic of the quality of pedagogical practice in higher education in Algeria—a subject that, to the researcher's knowledge, has not received sufficient attention in previous research. University libraries lack studies of this nature, and it is hoped that this work will serve as a starting point for further research in this field.
- The current era, known as the "Age of Knowledge," is witnessing a widespread culture of quality. Accordingly, it is essential to explore models of quality in higher education, including the quality of pedagogical practice and the requirements for its improvement.
- The necessity of elevating Algerian universities to higher levels of pedagogical quality, overcoming obstacles that hinder the achievement of their goals, and fulfilling their civilizational mission of producing and disseminating knowledge.
- The study contributes to understanding the roles of university instructors within the pedagogical process, particularly in terms of design, guidance, and facilitation, to improve the quality of education and better meet students' needs in alignment with established educational objectives, while also informing the development of relevant educational policies.
- The study has practical significance in that its findings will provide an understanding of the reality of pedagogical practice at the Faculty of Social, Human, and Islamic Sciences, Ahmed Draïa University – Adrar, along with recommendations that may inspire further research and debate.

4. Objectives of the Study:

This study seeks to achieve the following objectives:

- To identify the current state of the quality of pedagogical practice and the requirements for its improvement at Ahmed Draïa University – Adrar.
- To determine the differences in the requirements for implementing quality pedagogical practice at the Faculty based on gender, age, academic qualification, rank, years of experience, and field of specialization.

5. Operational Definitions Quality:

In education, quality refers to the process of applying a set of academic and instructional standards necessary to raise the quality of the educational product through the efforts of all members of an institution, across all aspects of educational work.

In educational contexts, quality encompasses the set of characteristics and attributes that accurately and comprehensively express the essence and condition of education, including all its dimensions inputs, processes, outputs, feedback and the continuous interactions that lead to the achievement of desired goals.

Operational definition: Improving the educational process in all its dimensions.

Pedagogical Practice:

The evaluation of the teaching process at the Faculty of Social, Human, and Islamic Sciences, Ahmed Draïa University – Adrar. It refers to the set of instructional content and activities delivered by university faculty members in accordance with higher education quality standards.

University:

An organized academic and educational institution at the top of the educational hierarchy in society, responsible for preparing individuals professionally, in addition to conducting scientific research that serves comprehensive development plans and training researchers for the public good (Conference of Arab Ministers Responsible for Higher Education, 1983, p. 10).

It is also a place where the processes of knowledge development and community service intersect with the need for qualified graduates (Alain Touraine, 1974, p. 591).

Operational definition: An educational and instructional institution that performs multiple functions aimed at achieving comprehensive development, including teaching, scientific research, and community service through the preparation, training, and qualification of individuals for the university educational process.

Improvement Requirements:

The process of enhancing and optimizing the implementation of measures to improve teaching performance, moving from less effective to more effective practices, by assessing the quality of this process in accordance with the quality standards of the Faculty of Social, Human, and Islamic Sciences, Ahmed Draïa University – Adrar.

5. Methodological Procedures of the Study:

5.1 Research Method:

Given the nature of the study and its objectives—to examine the quality of pedagogical practice in Algerian universities and the requirements for applying comprehensive quality at the Faculty of Social, Human, and Islamic Sciences, Ahmed Draïa University – Adrar, with respect to gender, age, academic qualification, rank, years of experience, and specialization—the researcher adopted a descriptive method based on a quantitative statistical approach. This method determines the current state of the phenomenon under investigation and provides a descriptive report on it (Abdel Rahman Addas, 1993, p. 17). It aims to describe the phenomenon, gather facts and observations, report its actual status, and include analysis, interpretation, and the identification of relationships between variables.

5.2 Temporal and Spatial Scope of the Study:

The study was conducted from February 5, 2023, to February 19, 2023, at the Faculty of Social, Human, and Islamic Sciences, Ahmed Draïa University – Adrar, covering the following departments:

- Department of Human Sciences.
- Department of Social Sciences.
- Department of Islamic Sciences.

5.3 Study Population and Sampling Method:

a. Study Population:

The population of this study consisted of permanent faculty members at the Faculty of Social, Human, and Islamic Sciences, Ahmed Draïa University – Adrar, during the 2022–2023 academic year.

b. Sampling Method:

A random sampling technique was used to select participants from the total population of permanent faculty members at the Faculty, resulting in a sample of 65 faculty members.

c. Sample Characteristics:

- **Distribution by Gender:**

The sample consisted of 65 faculty members from the Faculty of Social, Human, and Islamic Sciences, Ahmed Draïa University – Adrar, distributed as shown in the following table:

Table (01): Distribution of the Study Sample According to Gender

female		male		total
percentage %	number	percentage%	number	65
40%	26	60%	39	

From Table (01), the distribution of the study sample by gender shows that males represent 60% of the total sample, while females account for 40%. This indicates that the proportion of males is higher than that of females.

Distribution of the Study Sample by Age:

The ages of the participants in the study sample range from 28 years to 50 years and above, distributed as shown in the following table:

Table (02): Distribution of the Study Sample According to Age

Age range	frequency	% Percentage
28 – 37 years	21	32%
38 – 47 years	24	36%
48 years and above	20	30%
Total	**65**	**100%**

From Table (02), the distribution of the study sample by age indicates that 32% of the faculty members are between 28 and 37 years old, 36% are between 38 and 47 years old, and 30% are aged 48 years and above. These percentages are relatively close to one another.

Distribution of the Study Sample by Academic Qualification:

The study sample is divided, in terms of academic qualification, into faculty members holding doctoral and master's degrees, distributed as shown in the following table:

Table (03): Distribution of the Study Sample According to Academic Qualification

Academic qualification	frequency	percentage%
doctorate	37	56%
Master's degree	28	43%
total	**65**	**100%**

From Table (03), the distribution of the study sample by academic qualification shows that 56% of the faculty members hold a doctoral degree, while 43% hold a master's degree.

Distribution of the Study Sample by Academic Rank:

The distribution of the study sample according to academic rank is presented in the following table:

Table (04): Distribution of the Study Sample According to Academic Rank

Academic rank	frequency	percentage%
Professor of Higher Education	15	23%
Associate Professor	12	18%
Lecturer	20	30%
Assistant Professor	18	27%
total	**65**	**100%**

From Table (04), the distribution of the study sample by academic rank indicates that 23% of the faculty members hold the rank of Professor of Higher Education, 18% hold the rank of Associate Professor the lowest proportion while 30% are Lecturers and 27% are Assistant Professors.

Distribution of the Study Sample by Years of Experience:

The distribution of the study sample according to years of experience is shown in the following table:

Table (05): Distribution of the Study Sample According to Years of Experience

Years of Experience	frequency	percentage%
Less than 5 years	18	27%
5 to 10 years	16	24%
11 to 20 years	16	23%
21 to 30 years	10	15%
More than 30 years	6	9%

Total	**65**	**100%**

From Table (05), the distribution of the study sample by years of experience shows that 27% of the faculty members have less than 5 years of experience, 24% have between 5 and 10 years, and 23% have between 11 and 20 years of experience. Furthermore, 15% have between 21 and 30 years of experience, while only 9%—the smallest proportion have more than 30 years of experience.

Distribution of the Study Sample by Field of Specialization:

The study sample is distributed across the following specializations: Sociology, Psychology, History, Media and Communication, and Islamic Sciences, as presented in the following table:

Table (06): Distribution of the Study Sample According to Specialization.

Specialization	frequency	Percentage%
Sociology	15	23%
Psychology	12	18%
History	14	21%
Media and Communication	09	13%
Islamic Sciences	15	23%
Total	**65**	**100%**

From Table (06), the distribution of the study sample by specialization indicates that 23% of the faculty members specialize in Sociology, 18% in Psychology, and 21% in History. Additionally, 13% specialize in Media and Communication, while 23% specialize in Islamic Sciences.

6. Study Tool and Its Specifications:

The study tool consisted of a questionnaire, which was developed after reviewing the relevant literature. It contained 20 items distributed across two dimensions and employed a dichotomous response scale ("Yes–No"). The questionnaire was then presented to a panel of seven (07) expert faculty members in the relevant field for validation.

7. Psychometric Properties of the Study Tool:

7.1 Validity of the Research Tool:

a. Expert Validity:

To ensure the validity of the research tool, the questionnaire was reviewed by a group of expert faculty members with relevant experience, to assess the clarity and appropriateness of the items from both pedagogical and linguistic perspectives. The experts evaluated the relevance of each item to the dimension it was intended to measure, and suggested modifications, deletions, or additions where necessary.

b. Intrinsic Validity:

Intrinsic validity was calculated by taking the square root of the reliability coefficient $\sqrt{0,98}$ .The intrinsic validity coefficient for the questionnaire was found to be 0.98, indicating a high degree of validity.

7.2 Reliability of the Research Tool:

The reliability coefficient for the questionnaire was calculated using the split-half method. The questionnaire was divided into two halves: the first half included odd-numbered items (X) from 1 to 19, and the second half included even-numbered items (Y) from 2 to 20. After administering the questionnaire, each participant obtained two separate scores—one for the odd items and one for the even items. Pearson's correlation coefficient between the two sets of scores was found to be **r = 0.79**.

To further verify this result and reduce the effect of guessing, the Spearman–Brown prophecy formula was applied, yielding a corrected reliability coefficient of

y r = 0.98, which is sufficient to indicate a high level of reliability.

Presentation and Discussion of Results:

- **Presentation and discussion of the first hypothesis,** which states that the reality of the quality of pedagogical practice and the requirements for its improvement at the Algerian university, specifically at the Faculty of Human, Social, and Islamic Sciences at Ahmed Draïa University in Adrar, is at an average level.

  To verify this hypothesis, percentages were calculated based on the responses of the sample individuals according to the faculty's departments, and the following table illustrates this:

Table (07): shows the percentages according to the responses of the sample individuals by the faculty departments.

Dimension	Department of Human Sciences		Department of Sociology		Department of Islamic Sciences	Level
	Percentage %	Level	Percentage %	Level	Percentage %	
Quality of Pedagogical Practice	50.22%	Average	43.14%	Average	45.65%	Average
Improvement Requirements	40.32%	Average	16.82%	Low	32.55%	Average
Total	90.54%	Average	52.96%	Average	78.20%	Average

It appears from the above table, which illustrates the percentages of the sample responses to the questionnaire items at the level of each department included in this field study, that the percentage for the dimension of the quality of pedagogical practice among the sample of the Department of Human Sciences was 50.22% at an average level, while in the dimension of improvement requirements it was 40.32% at an average level. For the sample of the Department of Sociology, the percentage for the quality of pedagogical practice was 43.14% at an average level, while in the dimension of improvement requirements it was 16.82% at a low level. As for the sample of the Department of Islamic Sciences, the percentage for the quality of pedagogical practice was 45.65% at an average level, while in the dimension of improvement requirements it was 32.55% at an average level.

This result can be interpreted as reflecting that the reality of the quality of pedagogical practice is relatively similar in its level across the three departments, where the percentages remained within the average level, which supports the validity of the hypothesis. Moreover, the evaluation of the improvement requirements was at an average level in most departments, except for the Department of Sociology, which showed a low evaluation of the improvement requirements. This may reflect the existence of challenges or a lack of awareness regarding the need to develop certain pedagogical aspects, or perhaps a weakness in the presence of clear plans to improve quality within this department in particular.

These percentages reflect a relative awareness among faculty members and stakeholders in the educational process of the importance of the quality of pedagogical performance. At the same time, however, they highlight the need for further efforts to improve and develop these practices beyond the average level toward a higher level of quality and effectiveness.

Accordingly, the results emphasize the importance of strengthening a culture of pedagogical quality within the departments, through the provision of training programs, workshops, and regular evaluative follow-up, in order to ensure the transition from the average level to a higher and more integrated level of pedagogical performance within the university.

- **Presentation of the second hypothesis,** which states that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human, Social, and Islamic Sciences at Ahmed Draïa University in Adrar according to the variables of gender, age, academic qualification, rank, years of experience, and specialization.
- **Presentation of the first sub-hypothesis,** which states that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human, Social, and Islamic Sciences at Ahmed Draïa University in Adrar according to the variable of gender.

Table (08): Significance of differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the gender variable.

Dimension	Males		Females		T-value	Significance Level
	Mean	SD	Mean	SD		
Quality of Pedagogical Practice	8.23	0.21	8.43	0.35	0.67	0.05
Improvement Requirements	8.59	0.33	7.54	0.20	0.54	0.05
Total	16.82	0.54	15.97	0.55		

It is evident from the previous table that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the gender variable. Female respondents recorded a higher mean in the dimension of the quality of pedagogical practice, estimated at 8.43 with a standard deviation of 0.35, while the calculated *t*-value reached 70.6 at a significance level of **0.05**, which is statistically significant. This indicates the presence of significant differences between males and females in this dimension, pointing to their positive perception of the level of pedagogical performance. This also reflects a greater awareness among males of the need to develop teaching performance and improve certain aspects related to the quality of practice.

On the other hand, males recorded a higher mean in the dimension of improvement requirements, estimated at 8.59 with a standard deviation of 0.33, while the *t*-value reached 0.54 at a significance level of **0.05**, which is statistically significant. This highlights a difference in perception between males and females.

This result can be interpreted to mean that gender represents a variable with a significant influence on faculty members' perception of the level of quality and the requirements for its improvement. This may be attributed to differences in professional experiences, expectations from the educational environment, or the degree of engagement in teaching, planning, and quality-related tasks. Accordingly, it is recommended that this variable be taken into account when designing programs aimed at improving pedagogical performance, to ensure that the needs of all groups are met.

- **Presentation of the second sub-hypothesis,** which states that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the variable of age.

Table (09): Significance of differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the age variable.

Dimension	Source of Variation	df	Sum of Squares	Mean Squares	F-value	Significance
Quality of Pedagogical Practice	Between groups	2	2.821	12.644	2.57	Significant at 0.05
	Within groups	62	102.079	3.269		
	Total	64	104.9			
Improvement Requirements	Between groups	2	3.453	5.351	3.96	Significant at 0.05
	Within groups	62	120.45	1.342		
	Total	64	123.453			

It is evident from the previous table that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the age variable. The *F*-value in the dimension of the quality of pedagogical practice was 2.572 at a significance level of 0.05 with degrees of freedom (2–62), which is statistically significant. This indicates the presence of significant differences among the different age groups in their assessment of the quality of pedagogical practice. Moreover, the *F*-value in the dimension of improvement requirements reached 3.96 at the same level of significance, which also confirms the presence of significant differences among the age groups regarding the requirements for improving the quality of pedagogical practice.

These results suggest that age represents an influential factor in the respondents' evaluations of the quality of pedagogical practice and its requirements. This may be attributed to variations in knowledge backgrounds and educational experiences among the different age groups. It may also reflect differences in perceptions regarding teaching methods and their alignment with modern standards in higher education. It is possible that the younger age group is more open to innovative teaching approaches or to improving pedagogical performance compared to the older groups.

- **Presentation of the third sub-hypothesis,** which states that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the academic qualification variable.

Table (10): Significance of differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the academic qualification variable.

Dimension	Source of Variation	df	Sum of Squares	Mean Squares	F-value	Significance
Quality of Pedagogical Practice	Between groups	1	4.281	10.265	2.85	Significant at 0.05
	Within groups	63	102.54	3.387		
	Total	64	106.821			
Improvement	Between groups	1	4.834	11.512		
	Within groups	63	112.32	3.569		

Requirements	Total	64	117.154		3.43	Significant at 0.05

It is evident from the previous table that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the academic qualification variable. The *F*-value in the dimension of the quality of pedagogical practice was 2.85 at a significance level of 0.05 with degrees of freedom (1–63), which indicates a significant difference between the two groups in terms of academic qualification in their assessment of pedagogical quality. Moreover, the *F*-value in the dimension of improvement requirements was 3.43 at the same level of significance and degrees of freedom, which confirms the existence of significant differences in the evaluation of the requirements for improving pedagogical quality between holders of different academic qualifications.

This result can be interpreted to mean that academic qualification is an influential factor in individuals' perceptions of the quality of pedagogical practice and its requirements. Academic qualification may reflect differences in the level of knowledge, experience, and expectations regarding the application of quality standards in the educational process. Therefore, these differences necessitate the consideration of diversifying training programs and workshops to suit the different levels of academic qualification, thereby contributing to raising the quality of pedagogical practice more effectively.

- **Presentation of the fourth sub-hypothesis,** which states that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the academic rank variable.

Table (11): Significance of differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the academic rank variable.

Dimension	Source of Variation	df	Sum of Squares	Mean Squares	F-value	Significance
Quality of Pedagogical Practice	Between groups	3	5.487	13.302	4.31	Significant at 0.05
	Within groups	61	123.76	4.473		
	Total	64	154.94			
Improvement Requirements	Between groups	3	4.159	15.653	5.58	Significant at 0.05
	Within groups	61	129.247	3.987		
	Total	64	159.099			

The results of testing the fourth sub-hypothesis revealed statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the variable of academic rank. The *F*-value in the dimension of the quality of pedagogical practice was 4.31 at a significance level of **0.05** with degrees of freedom (3–61), indicating a significant difference among the different categories of academic rank in their assessment of pedagogical quality. Moreover, the *F*-value in the dimension of improvement requirements was 5.58 at the same level of significance and degrees of freedom, which confirms the presence of significant differences in the evaluation of the requirements for improving pedagogical quality among different academic ranks.

This result can be interpreted to mean that academic rank is an influential factor in individuals' perceptions of the quality of pedagogical practice and its requirements. It may reflect differences in experience, responsibilities, and expectations associated with each rank, as well as the level of involvement in the educational process among individuals of different ranks. Therefore, it is recommended that these differences be taken into account when designing targeted professional development programs that suit the needs of various ranks, with the aim of enhancing pedagogical practice quality comprehensively.

- **Presentation of the fifth sub-hypothesis,** which states that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the variable of years of experience.

Table (12): Significance of differences in the requirements for applying the quality of pedagogical practice at the Faculty of Human and Social Sciences at Ahmed Draïa University in Adrar according to the variable of years of experience.

Dimension	Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F Value	Significance
Quality of Pedagogical Practice	Between Groups	4	6.459	15.439	5.34	Significant at 0.05
	Within Groups	60	104.900	3.395		
	Total	64	111.359			
Improvement Requirements	Between Groups	4	4.912	11.725	5.76	Significant at 0.05
	Within Groups	60	121.458	5.203		
	Total	64	126.37			

It is evident from the previous table that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Humanities and Social Sciences, Ahmed Draïa University in Adrar, according to the variable of years of experience. The calculated value of the F-test for the dimension of pedagogical practice quality reached 5.34 at a significance level of 0.05 and degrees of freedom (4–60), which indicates the existence of a significant difference among the different categories in terms of years of experience in evaluating the quality of practice. Likewise, the F value for the dimension of improvement requirements reached 5.76 at the same level of significance and degrees of freedom, which confirms the presence of significant differences in the evaluation of requirements for improving the quality of practice among the different categories of years of experience.

This result can be interpreted as showing that years of experience constitute an influential factor in individuals' perceptions of the quality of pedagogical practice and its requirements, as those with greater experience are more likely to possess a deeper understanding of the strengths and weaknesses in pedagogical performance, which in turn affects their expectations and needs regarding improvement and development.

Presentation of the sixth sub-hypothesis, which states that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Humanities and Social Sciences, Ahmed Draïa University in Adrar, according to the variable of specialization.

Table No. (13): Shows the significance of the differences in the requirements for applying the quality of pedagogical practice at the Faculty of Humanities and Social Sciences, Ahmed Draïa University in Adrar, according to the variable of specialization.

Dimension	Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F Value	Significance
Quality of Pedagogical Practice	Between Groups	4	5.112	14.387	5.11	Significant at 0.05
	Within Groups	60	105.150	4.566		

	Total	64	110.262			
Improvement Requirements	Between Groups	4	4.342	12.187	6.42	Significant at 0.05
	Within Groups	60	122.523	6.523		
	Total	64	126.865			

It is evident from the previous table that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Humanities and Social Sciences, Ahmed Draïa University in Adrar, according to the variable of specialization. The F value for the dimension of pedagogical practice quality reached 5.11 at the significance level of 0.05 with degrees of freedom (4–60), which indicates the existence of a significant difference among the various specializations in the evaluation of quality of practice. Likewise, the F value for the dimension of improvement requirements reached 6.42 at the same level of significance and degrees of freedom, which confirms the presence of significant differences in the evaluation of requirements for improving the quality of practice among the different specializations.

This result can be interpreted to mean that specialization constitutes an influential factor in individuals' perceptions regarding the quality of pedagogical practice and its requirements, since the nature of curricula and the required skills vary across specializations, which in turn is reflected in the diversity of needs and standards related to quality. Accordingly, it is recommended to take into account specialization-related differences when designing strategies for improving the quality of practice, in order to ensure that they are aligned with the specificities of each field of study.

Conclusion:

Finally, and as a summary of the results reached in this study, it can be stated that all hypotheses were statistically significant, as summarized below:

- Beginning with the first hypothesis, which stated that the reality of the quality of pedagogical practice and the requirements for its improvement in the Algerian university, specifically at the Faculty of Humanities, Social Sciences, and Islamic Studies at Ahmed Draïa University in Adrar, is at a moderate level, the results confirmed the validity of this hypothesis.
- As for the second hypothesis, which stated that there are statistically significant differences in the requirements for applying the quality of pedagogical practice at the Faculty of Humanities and Social Sciences, Ahmed Draïa University in Adrar, according to the variables of gender, age, academic qualification, rank, years of experience, and specialization, the results confirmed its validity, with some studies supporting it while others contradicted it.

Study Recommendations:

Based on the results of the present study, the following recommendations can be made:

- Develop university education in Algeria in light of managing the quality of pedagogical practice.
- Ensure that faculty members and administrative staff, regardless of their rank, receive training in modern management methods and tools that keep pace with ongoing developments—especially in matters related to distance education and assessment—through regular training sessions and workshops.
- Design a system for evaluating the quality of teaching and scientific research, involving students and colleagues in performance evaluation according to clear organizational procedures.
- Organize training sessions and conferences for stakeholders in the university educational process on the quality of pedagogical practice and promote its culture within university communities.
- Update curricula adopted under the L.M.D. system in line with the standards and requirements of employment.

- Conduct studies addressing the quality of pedagogical practice and the requirements for its improvement in other Algerian universities.
- Conduct studies comparing the quality of pedagogical practice and the requirements for its improvement in Algerian universities with those in foreign universities.

References:

Arabic References:

1. Lahcen Bouabdellah, Mohamed Mekdad.(1998). Evaluation of the Training Process – A Field Study of Eastern Algerian Universities, University Publications Office, Algeria.
2. Ali Rached.(2007). The University and University Teaching, Darwa Maktabat al-Hilal, Beirut.

Scientific Research:

1. Ismail Salem Mansour Madi.(2010). The Role of Knowledge Management in Ensuring the Achievement of Quality in Higher Education, Published Master's Thesis, supervised by Youssef Hussein Mahmoud Ashour, Department of Business Administration, Islamic University, Gaza.
2. Zerkan Laila, Proposed Development of a Training Program for University Faculty Members in Light of Quality Standards in Higher Education at Setif University 1–2 as a Model, Published Doctoral Thesis, Department of Psychology, Setif University 2, Algeria.
3. Ajal Massouda.(2009–2010). Organizational Values and Their Relationship to the Quality of Higher Education, Published Master's Thesis, Department of Psychology, Educational Sciences and Orthophony, Mentouri University, Constantine, Algeria.
4. Lerkat Ali.(2008–2009). The Possibility of Applying Total Quality Management in Higher Education Institutions in Algeria, Published Master's Thesis, Department of Psychology and Educational Sciences, Hadj Lakhdar University, Batna, Algeria.

Journals and Periodicals:

1. Samir Ben Hussein.(2015). Assessing the Effectiveness of Quality Assurance Units in Contributing to the Development of a Quality Assurance System in Algerian Higher Education – A Field Study, Journal of Human and Social Sciences, Issue 18, March 2015.
2. Brouche Zinedine, Youssef Berkan. (2012). Project for the Application of the Quality Assurance System in Higher Education Institutions in Algeria – Reality and Prospects, The Second Arab International Conference on Quality Assurance in Higher Education, Bahrain.
3. Bouhania Kouidri et al. (2012). Measuring the Quality of Faculty Management in Algerian Universities: An Exploratory Study on Faculty Members at the Faculty of Law and Political Science, University of Ouargla, The Second Arab International Conference on Quality Assurance in Higher Education, Bahrain.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Role of Custody in Safeguarding Family Bonds in Moroccan Legislation

Benhachani Zouhir
Doctor
Faculty of Law and Political Science, University of Batna, Algeria, Laboratory: Environmental Studies and Sustainable Development
Algeria
E-mail: benhachanizouhir@gmail.com , Orcid: https://orcid.org/0009-0001-2889-382X

Djerada Lakhdar
Doctor
University Ahmed Draia, Adrar
Algeria
E-mail: lakhdar@univ-adrar.edu.dz , Orcid: https://orcid.org/0009-0002-5563-5356

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Maghreb legislations, custody, housing, visitation rights, child.

Abstract
This study addresses a topic of considerable sensitivity due to its close connection to the family and society, particularly within the framework of Maghreb legislations—namely, child custody. Custody is a fundmental matter with both legal and religious dimensions, as affirmed by Maghreb legislations in their regulation of custody in accordance with Islamic legal principles. Among the primary rights accorded to the child under custody are the right to housing, visitation rights, and the right to nursing. In their pursuit of protecting the best interests of the child, Moroccan lawmakers have enacted specific provisions governing custody, recognizing its central impact on the family unit and the wider society.

Citation. Benhachani, Z., Djerada, L., (2025). The Role of Custody in Safeguarding Family Bonds in Moroccan Legislation. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 480–492. https://doi.org/10.56352/sei/8.11.36

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.01.2025 | Accepted: 17.05.2025 | Published: 02.09.2025 (available online)

Introduction

Marriage is a consensual contract between a man and a woman, founded on mutual affection and compassion, with the aim of establishing a family. Divorce, along with its resulting consequences, has long been a major concern for legislators—particularly in the Maghreb context—as well as for researchers seeking alternative means to mitigate its negative impact, especially on children under custody.

While custody is one of the legal consequences of divorce, it also reflects the attention that Maghreb

legislations devote to the protection of children, a responsibility that is traditionally entrusted to women. This is codified in Algerian law under Ordinance 05-02 amending and supplementing Law 84-11, and in Morocco within the first chapter of the second section of the Moroccan Family Code.

The comparative study of custody in Algerian and Moroccan law is justified by their shared legal and religious foundations, which recognize the right of a divorced mother to custody and regulate its associated provisions. It is also supported by the social similarities between the two countries, notwithstanding certain differences in substantive and procedural rules, and consequently in each legislature's approach to determining the custodial rights of divorced mothers.

This study is guided by a central question: *How effective is the custody framework in each country in protecting the rights of children under custody in Algeria and Morocco?* From this main question arise two subsidiary questions:

- Have Algerian and Moroccan legislators succeeded in safeguarding the divorced mother's right to custody of her children?
- To what extent are the existing legal frameworks sufficient to protect the rights of the child under custody in both jurisdictions?

The objective of this research is to present a comprehensive examination of custody provisions in order to identify shortcomings and highlight the strengths of each legal system. The study proceeds from the understanding that awarding custody to either parent produces specific consequences—some of an entitlement nature (Part One) and others of a compensatory nature (Part Two).

Part One: Custody-Related Effects of an Entitlement Nature

Custody is one of the most significant matters relating to children's rights, encompassing their upbringing, protection, care, and both material and moral support. Custody provisions are an expression of the Islamic legal system's deep concern for childhood, which further elevates the importance and value of custody in society. For this reason, Maghreb legislations—within the scope of this study—have adopted a range of provisions ensuring the protection and welfare of the child under custody.

Section One: The Right to Visit the Child in Islamic Jurisprudence

When parents divorce, the child remains in the custody of one parent to the exclusion of the other. In such cases, the non-custodial parent is granted the right to visit the child. This right serves not only to ensure material care but also to secure the moral and emotional well-being of the child. Visitation, as recognized in Islamic jurisprudence, is therefore a right owed to the non-custodial parent and, more importantly, a right that exists for the benefit of the child.

A. The Concept of Visitation in Language and Legal Terminology

The highest form of a child's upbringing is achieved when both parents are present to provide care and affection. However, when the parents separate, custody is granted to the parent deemed most capable of serving the child's best interests. Even so, neither parent may prevent the other from visiting or seeing the child. On this basis, it is essential to clarify the linguistic and juristic meanings of the term *visitation*.

a) Definition of Visitation in Linguistic and Juridical Usage

1. Linguistic Definition

The term *ziyārah* (زيارة, visitation) derives from the verb *zāra* (زار), meaning *to visit*. In Arabic usage, it refers to the act of going to see someone, such as in the expressions: *zārahu ziyārah* or *zuwārah*, and also *izdārahu*, which similarly conveys the act of visiting. (Ibn Manzur, p. 355)

The word *zār* also denotes "visitors," as in the expressions *rajul zā'ir* (a visiting man) and *qawm zār* (a group of visitors), with *zār* being the feminine plural form. (Al-Jawhari, 1990, p. 417)

2. Juridical Definition

In Islamic jurisprudence, visitation is defined as the act of meeting the child under custody and inquiring into his or her living, educational, moral, and health conditions, within the same environment where the child resides. Jurists have expressed the notion of visitation through various synonymous terms, such as *seeing one's child*, *observing the child's well-being*, and *maintaining personal contact and care*. (Al-Zu'nani, n.d, p. 39)

b) Definition of Visitation in Maghreb Legislations

The Algerian legislator addressed visitation rights in Article 64 of the Algerian Family Code, which provides: *"When awarding custody, the judge must also rule on visitation rights."* Accordingly, the Algerian legislator neither defined the concept of visitation nor clarified its purpose or underlying rationale. Instead, the law merely obliges the judge, when granting custody, to also grant visitation rights. Furthermore, the legislator did not regulate the modalities of visitation, leaving such matters to the discretion of the judge pursuant to Article 222 of the Algerian Family Code.

In contrast, the Moroccan legislator addressed visitation in Article 180 of the Moroccan Family Code,[·] which stipulates: *"The non-custodial parent has the right to visit and host the child."* Like Algerian law, Moroccan law provides no precise definition of visitation nor specifies its objectives. However, it differs in that it extends visitation rights to grandparents — specifically, to the parents of the deceased parent — provided that one of the child's parents is deceased. In such cases, only the parents of the deceased parent may visit or host the child.

B. Legitimacy of the Right to Visitation in Maghreb Legislations

Maghreb family laws expressly recognize the legitimacy of visitation rights for the non-custodial parent, as reflected in a series of statutory provisions governing this right.

In Algeria, as provided in the second paragraph of Article 64 cited above, the judge — when granting divorce — is required, if custody is awarded to the mother or another person, to also grant visitation rights to the other parent. The judgment must specify the times and locations for exercising visitation. This right goes beyond merely seeing the child; it also encompasses monitoring the child's welfare, ensuring his or her proper care, and strengthening the relationship between the child and the non-custodial parent. Visitation rights are not subject to the personal whims of either the custodial or non-custodial parent; rather, they are a binding legal obligation regulated by the court at the time custody is granted, with the child's best interests as

[·] . Law No. 03/70, enacted by Royal Decree No. 22/4/01, dated 03/02/2004, (*Official Gazette*, No. 5184, concerning the Moroccan Personal Status Code).

the guiding principle.

As for Morocco, the legitimacy of visitation rights is established not only through statutory recognition but also through detailed procedural safeguards. Articles 180 to 186 of the Moroccan Family Code (Shafi'i, 1995, p. 231) set out rules for visitation and grant judges discretionary authority to ensure proper regulation and enforcement. The Moroccan legislator provides for visitation either through mutual agreement between the parents or, in the event of disagreement, through judicial intervention. The court specifies and regulates visitation in detail within the custody award judgment.

C. Abuse of the Right to Visit the Child

Jurists unanimously agree that parents have the right to see their child under custody and that it is impermissible to prevent either of them from doing so, as this is a right vested in both the child and the parents. Denial of visitation fosters estrangement and the severing of family ties. However, scholars have differed regarding the frequency of visitation: some advocate daily visits, while others limit them to once every few days. (Al-Shirbini, n.d, p. 199)

Forms of abuse of visitation rights include delaying or obstructing the implementation of visitation schedules. The custodial parent may postpone visitation under the pretext of protecting the child, changing the place of residence, or acting out of obstinacy or retaliation against the non-custodial parent.

Similarly, the non-custodial parent may abuse the right by choosing inappropriate times for visitation — such as late at night, during the custodial parent's working hours, or by prolonging the visit beyond the customary duration. Another form of abuse is the refusal to return the child to the custodial parent after the scheduled visitation period, with the intent to cause emotional harm or deprive the custodial parent of time with the child.

Section Two: The Right to Visit the Child in Maghreb Legislations

Custody is one of the essential requirements for the welfare of the child, and it is a duty incumbent upon the parents, the family, and society both during and after the marital relationship. For this reason, Maghreb legislators have explicitly recognized the right to visitation as one of the most important means of maintaining the child's bond with his or her family environment.

To safeguard this right, Maghreb legislations have surrounded it with a range of guarantees, most notably the principle of the child's best interests, entrusted to the discretionary authority of the judiciary.

A. The Right to Visit the Child under Algerian Family Law

The underlying rationale for visitation rights, as reflected in Algerian legislation, is to enable the non-custodial parent to monitor the child's living conditions, moral upbringing, education, and religious guidance through continuous oversight in the exercise of parental authority. It is impermissible to prevent the non-custodial parent from seeing the child or to sever their relationship.

a) Legal Nature of the Persons Entitled to Visitation

Custody is a vested right of the child. Article 62 of the Algerian Family Code defines custody as the care, education, and upbringing of the child in the religion of his father, and the safeguarding of his physical and moral well-being. Article 134 of the Algerian Civil Code further provides:

"Anyone who, by law or by agreement, is required to supervise a person in need of protection due to his mental or physical condition, is liable for any harm caused by that person to others through his harmful act..."[1]

Thus, the legislator has placed sole responsibility on the father for damage caused by his child to third parties so long as the child resides with him. In cases of separation, when the child moves to live with the mother, the requirement of cohabitation ceases, and so does the father's liability.

Referring again to Article 64 of the Family Code, we note that the legislator grants visitation rights without restricting them to a specific party, leaving the determination of eligible visitors to the judge's discretion, in order to ensure the child's welfare. (Abd al-Aziz, 1989, p. 87)

Visitation rights are not confined to the disputing parents but may extend to relatives such as the child's grandparents. This interpretation is supported by a ruling of the Algerian Supreme Court, which held:

"It is established in law that just as a grandfather is obliged to provide maintenance, so too does the grandson have the right to visit him. Therefore, when the trial court granted visitation rights to the grandfather — who is considered an ascendant of the child and stands in the place of the deceased father — and since he is also liable for maintenance, it follows that he is equally entitled to visitation in accordance with Article 77 of the Family Code. The court, in so ruling, correctly applied the law, and the appeal must therefore be rejected." (Supreme Court, 2001, p. 192)

b) The Role of the Judiciary in Regulating Visitation Rights

Visitation should take place in an environment where the child can enjoy the care and attention of the visitor, even if only for a few hours, and the location should not cause undue embarrassment to the visitor, such as requiring the visit to occur at the custodial parent's home.

The legislator has not specified the place where visitation must occur. The parties may therefore agree on the location or any suitable arrangement to facilitate the exercise of visitation rights. (Dhiabi, 2008, pp. 91-92) If no agreement can be reached, the judge will determine the place of visitation.

Judicial precedent has also recognized that custody may be forfeited where geographical distance prevents the exercise of effective visitation rights — for example, when the custodial mother resides abroad while the father remains in Algeria — as the father's ability to oversee the upbringing of the children through visitation would be impeded.

B. The Right to Visitation in the Moroccan Family Code

The Moroccan Family Code not only recognizes visitation rights but also establishes detailed rules and procedures for their regulation. These new provisions grant the judiciary the authority to intervene in order to ensure the proper organization and enforcement of visitation rights, as set out in Articles 180 to 186 of the Code.

a) Visitation Rights for the Non-Custodial Parent

Article 180 of the Moroccan Family Code expressly provides: *"The non-custodial parent has the right to visit and host the child."* This makes it clear that visitation and hosting rights form part of public policy and

[1] . *Al-Qanun al-Madani al-Jaza'iri* (Algerian Civil Code), enacted by Ordinance No. 75-58 dated 20 Ramadan 1395 AH / 26 September 1975, *Official Gazette* No. 78.

therefore cannot be waived or contracted away. For the same reason, Moroccan judicial practice has established that enforcement of visitation rights — when obstructed — does not require a substantive ruling, but rather falls within the jurisdiction of the summary proceedings judge. (Al-Fakhuri, 2012, p. 332)

This principle is affirmed in an urgent ruling by the Casablanca Court of First Instance, which stated:

"...The judge in summary proceedings is competent to take any measures necessary to ensure the proper exercise of this right as required by law. The nature of kinship ties calls for immediate enforcement in the interest of affection." (Primary Court, 1992, p. 208)

The Moroccan legislator also allows for visitation arrangements to be determined by agreement between the parents. Article 181 of the Code provides: *"The parents may organize this visitation by mutual agreement, which they submit to the court; the court then records its content in the custody award."* The key advantage of an agreed arrangement is the precise specification of the time, place, and duration of visitation. If no agreement is reached, the court, exercising its discretion, regulates the visitation schedule and location to prevent any manipulation or abuse, while ensuring the interests of both the parents and the child. (Al-Fakhuri, 2012, p. 339)

b) Modification of Visitation Schedules

Circumstances may arise that cause harm to one of the parties if the visitation schedule remains as originally agreed or as determined by the court. Such situations require adjustments to the schedule in order to suit the new conditions.

Under Article 183 of the Code, the judge may extend visitation hours for the benefit of one parent, including permitting overnight stays, particularly during holidays and special occasions. Changes to visitation schedules may also become necessary upon the death of one parent, especially if the custodial parent obstructs or prevents visitation by the child's extended family.

In this respect, Article 185 of the Moroccan Family Code provides: *"If one of the child's parents dies, his or her own parents shall take his or her place in exercising the visitation rights regulated by the preceding provisions."* (Hamidu, 2004–2005, p. 203)

Part Two: Custody-Related Effects of a Compensatory Nature

The essence of custody lies in caring for the child both materially and morally. It is therefore a legitimate activity for which compensation may be granted. This work — which includes breastfeeding, safeguarding, and protecting the child during the custody period — constitutes an essential aspect of the custodian's responsibilities.

Section One: The Compensatory Nature of the Right to Nursing Allowance in Maghreb Legislations

Breastfeeding a child with milk is an obligation for as long as the child needs it, as it is one of his fundamental rights and the basis of his nutrition. During the first two years of life, a child's survival depends primarily on his mother's milk. Breastfeeding is considered part of the expenses incurred for the child's upbringing, and Maghreb legislations recognize this as among the rights of the child, including the divorced mother's right to a nursing allowance.

A. The Compensatory Nature of the Right to Nursing Allowance in Islamic Jurisprudence

Breastfeeding is founded upon compassion and kindness rather than on dispute and contention. No matter how much a father pays the mother for nursing their child, he cannot truly repay her effort and care. It is in the child's best interest to be nursed by his own mother, as she is the most affectionate, gentle, and attentive to his needs.

a) Definition of Breastfeeding in Linguistic and Juridical Usage

Before addressing the legal implications of breastfeeding, it is necessary to present its linguistic and juristic definitions.

1. Linguistic Definition

The term *riḍāʿ* (رضاع, breastfeeding) — with the *rā'* either broken or opened — is derived from the verb *raḍaʿa* (رضع), meaning *to suckle*, from the same pattern as *samiʿa* (*to hear*). *Raḍaʿa ummahu* means "he nursed from his mother's breast," and *raḍaʿa* also means "to extract milk from her breast." The term *raḍūʿah* refers to a sheep that suckles its young. (Al-Firuzabadi, n.d, p. 23)

The noun *murāḍaʿah* denotes "the act of drinking milk from the breast or from a nursing woman". (Ibn Durayd, 1987, p. 746)

2. Juridical Definition

Islamic jurists have provided various definitions of breastfeeding, including: *"The infant's sucking milk from the breast of a human female during the nursing period"*, (Al-Jurjani, 1405 AH, p. 148) and *"The actual or deemed drinking by a child of pure or predominantly mixed milk from a human female within a specific period"*. (Al-Manawi, 1410 AH / 1990, p. 366) Breastfeeding, in this context, is not limited to a fixed number of nursing instances, whether two or more.

As for the Algerian and Moroccan legislators, they have not provided a precise statutory definition of breastfeeding, as such definitions fall within the domain of Islamic jurisprudence.

b) Compensation for Nursing Allowance in Islamic Jurisprudence

Islamic jurists differ on whether a nursing mother is entitled to compensation for breastfeeding, depending on her marital status, as follows:

- **Hanafis**: A mother is not entitled to a nursing allowance if she is a wife or is divorced under a revocable divorce. However, if she is divorced irrevocably (*bāʾin*), some scholars hold that she is entitled to the allowance, while others deny her this right. (Al-Kasani, 1982, p. 41)
- **Malikis**: They distinguish between two situations. If the nursing mother is still married to the father, she is obliged to breastfeed without remuneration. However, if she is divorced irrevocably, she is not obliged to nurse; if she does, she is entitled to compensation. (Al-Dusuqi, 1419 AH / 1998, p. 826)
- **Shafiʿis**: They also differentiate between two cases:

1. If the nursing mother is either still married or in her waiting period (*ʿidda*) following a revocable divorce, they hold that if both parents agree that she will nurse the child — with or without pay — and she accepts, then the arrangement is valid.
2. If the nursing mother is irrevocably divorced, they say that if she volunteers to breastfeed, the father cannot prevent her or compel her to do so.

- If she requests payment equal to the prevailing rate (*ujrat al-mithl*) and the father has no one else to nurse the child without charge, she has the stronger right.
- If she demands more than the prevailing rate, the child may be removed from her care and given to another nurse.
- If she requests the prevailing rate but the father has another willing volunteer, two opinions exist:
- She has the stronger right, since she has accepted the standard rate.
- The father may still remove the child from her, as paying for nursing when a free alternative exists would cause him unnecessary expense. (Al-Nawawi, 1405 AH, p. 89)

- **Hanbalis**: They maintain that if the mother requests the prevailing rate for breastfeeding, she has the stronger right to nurse the child, regardless of whether she is still married or divorced, and whether or not the father can find another volunteer. (Ibn Muflih, 1400 AH, p. 22)

B. Subsection Two: The Compensatory Nature of the Right to Nursing Allowance in Maghreb Legislations

Breastfeeding a child with milk is an obligation for as long as the child needs it, as it is a fundamental right and the basis of his nutrition. In practice, a period of two years is sufficient for the child's body to receive from the mother's milk what it needs to grow during this time. Maghreb legislations have incorporated this principle into their family laws.

a) Compensation for Nursing Allowance in Algerian Family Law

The Algerian legislator obliges a wife to breastfeed her children and links the husband's right over his wife to three duties: obedience to the husband, respect for his parents and relatives, and breastfeeding the children. Under Algerian law, a nursing allowance is not granted if the mother is still married or divorced under a revocable divorce, (Belhaj , 2007, p. 167) because breastfeeding is a duty she must perform.

For a mother divorced irrevocably, the legislator does not expressly provide for a nursing allowance but includes it implicitly within the father's obligation to provide maintenance for his children. The father's duty to support a nursing infant is part of his financial obligation toward his offspring. In such matters, the Algerian legislator allows reference to Islamic legal principles, in accordance with Article 222 of the Algerian Family Code. (Abd al-Aziz, 1989, p. 98)

b) Compensation for Nursing Allowance in the Moroccan Family Code

Article 167 of the Moroccan Family Code[·] provides for a custody allowance and obliges the father of the child to pay it. A wife is not entitled to a nursing allowance as long as the marriage remains in effect. (Al-Kashbur, 2004, pp. 135-136)

The Moroccan legislator grants the nursing mother a nursing allowance once the marriage ends through death, irrevocable divorce, or the completion of the waiting period after a revocable divorce, provided she breastfeeds her child within the first two years. If the nursing mother is not the child's mother, she is entitled to the allowance regardless.

[·] . Article 167 of the Family Code: "The wages for breastfeeding and its expenses are borne by the person responsible for the maintenance of the child; they are distinct from custody wages and maintenance."

By analogy with the custody allowance, the nursing allowance may be waived as a gift or offered in lieu of *khul'* (mutual divorce), since anything that can be lawfully obligated can also serve as consideration in a *khul'* agreement. (Al-Tabbal, 2006–2007, p. 225)

Section Two: The Compensatory Nature of the Right to Housing Allowance in Maghreb Legislations

A dwelling represents comfort and stability for all family members, especially the custodial child, who receives affection, warmth, and proper upbringing within it. Housing is an essential element, and the responsibility of providing it rests on the husband, whether during the marital relationship or after its dissolution. The sanctity of the person requires that he feel safe in his home, protected in his privacy, free in his movement, and able to satisfy various psychological, material, and social needs.

A. Defining the Conceptual Framework of Housing

Just as maintenance (*nafaqa*) is, in its essence, a financial obligation incumbent upon the husband toward his wife, housing is included within it. It is therefore a mandatory right for the wife, enabling her to exercise her custody in a specific place, namely the *custody dwelling*.

a) Linguistic and Juridical Definitions of Housing

In Arabic, *sakan* (سكن) derives from *sakana*, meaning "to be still" as opposed to movement. *Sakan al-shay'* means "the thing became still." A *maskan* is a place to which one returns for family and property. (Al-Fayyumi, 2001, p. 3003)The noun *sakan* also refers to inhabiting a dwelling without paying rent, and more generally to any place in which one finds comfort and tranquility, whether with family or otherwise. (Al-Azhari, 2001, p. 93)

b) Juridical Definition

In legal usage, housing is defined as *"a dwelling prepared by the husband, which should be independent and contain all necessary amenities such as a bathroom and kitchen."* It is also defined as *"a dwelling that must be free of other occupants, consisting of a separate room in a house, equipped with a lock and necessary facilities, such as a latrine and kitchen, to fulfill its intended purpose".* (Ibn 'Abidin, n.d)

This concept carries two dimensions:

1. **Abstract** – A legal link binding a person to a particular location, which becomes the legal center of his affairs.
2. **Concrete** – The actual place of residence, i.e., the physical site where a person truly lives.

c) Definition of Housing in Maghreb Legislations

The Algerian legislator defines housing in Article 355 of the Penal Code:

"A dwelling is considered inhabited if it is any building, house, room, tent, or kiosk, even if mobile, whenever it is intended for residence, whether or not it is inhabited at the time. It includes all appurtenances such as courtyards, barns, grain stores, stables, and any structures within them, whatever their use, even if surrounded by a private fence within a public enclosure."

This demonstrates the legislator's broad conception of housing, its legal protection, and the sanctity afforded to it.

In contrast, the Moroccan legislator does not provide a specific definition of housing. Notably, housing

is no longer considered part of maintenance but rather an independent obligation. Article 168 of the Moroccan Family Code states:

"The costs of housing for the custodial child are considered independent in their assessment from maintenance, custody allowance, and other obligations". (Shafi'i, 1995, p. 169)

Thus, both Algerian and Moroccan legislators require not only the provision of housing for the custodial child but also that it be suitable, as stipulated in Article 72 of the Algerian Family Code and Article 171 of the Moroccan Family Code.

B. Forms of the Custodian's Entitlement to Housing in Maghreb Legislations

The obligation of the father to provide housing for the custodial child, as stipulated in Maghreb legislations, stems from the child's pressing need for it. However, legislators have required that such housing be suitable for the exercise of custody.

a) The Custodian's Entitlement to Housing under the Algerian Family Code

The husband is responsible for providing housing for the custodian and the custodial child during the marital relationship, and this obligation extends beyond the dissolution of marriage when there are children. The conditions for this entitlement depend on the arrangements in place during the marriage.

First – Ownership of the dwelling by the spouses

Article 53(3) of the Algerian Family Code does not require that the dwelling be owned or rented by the father in order to deny the divorced custodian the right to remain in it. Nor does ownership of the dwelling by the father constitute a reason to deprive the custodian and her children of remaining there. Likewise, if the dwelling is owned by the custodian herself, the husband must leave it after divorce since ownership is vested in her.

In cases where the dwelling is jointly owned by the spouses as part of the assets acquired during the marriage, this falls under Article 37 of the Algerian Family Code, which states:

"The spouses may agree in the marriage contract, or in a subsequent notarized contract, on the joint assets acquired during their marital life and on the respective shares that shall devolve to each of them." (Haddad, 2017, pp. 166-167)

Second – Ownership of the dwelling by relatives of the spouses

If the marital home belongs to the husband's family prior to separation, the custodian and the children cannot claim the right to occupy it. She also has no right to evict the husband from his family's home to keep it for herself and the children. Similarly, if the marital home belongs to the wife's family, the husband must vacate it after divorce, and she may require that he provide another residence for the exercise of custody or pay rental compensation.

Third – Housing linked to employment

If the spouses reside in employer-provided housing granted by the state for professional reasons—usually to be close to the workplace—this housing cannot be retained by the custodian after divorce. It is tied to the employment of the worker, in this case the husband, and must be vacated when the employment-based

entitlement ends. Allocating such a dwelling to the custodian is not possible because it is contractually linked to the employee's position. (Abd Al-Karim & Abd al-Sabur Khalaf Allah, n.d, p. 252)

b) The Custodian's Entitlement to Housing under the Moroccan Family Code

The Moroccan legislator no longer considers housing to be part of maintenance (*nafaqa*), but rather an independent obligation in its own right, as stated in Article 168 of the Moroccan Family Code. [˙]

First – Scope of the housing obligation

Under Article 168, the father has the option of either providing his children with a suitable independent residence in which they live together with their custodial mother, vacating his own residence for them, or paying them rental compensation. The court must approve this arrangement and may reassess it at its discretion.

Second – Ways in which the custodian may benefit from her former husband's housing

Article 175 of the Moroccan Family Code [¨] provides that if the custodial mother marries another man, the latter also benefits from the housing by virtue of living with her. In such a case, the father is relieved of the obligation to provide housing.

A further difficulty arises when the custodian and the child remain in the marital home, which belongs to the father, and the mother refuses to vacate it after the *ʿidda* period. The father, as owner, has the right to reclaim his property but may find himself effectively homeless while the custodian insists on remaining for custody purposes.

Given these practical difficulties in enforcing the custodian's housing rights, the Family Code has established that the custodian and child may not be evicted from the marital home until the father has complied with the judgment requiring him to provide appropriate housing for the child or to pay the court-determined rental compensation. (Al-Azhar, 2010, p. 398)

Conclusion

Custody (*ḥaḍāna*) is one of the most sensitive and significant legal issues, as it is a right intrinsically linked to the family, grounded primarily in the best interest of the child, and closely tied to both the material and moral capacities of the custodian.

The purpose of this study has been to assess the extent of convergence and harmony between the Algerian and Moroccan legislators, with the ultimate aim of moving toward a comprehensive and unified legal framework that ensures equal protection for the custodian and the child's welfare.

Findings

1. Maghreb legislators give particular attention to family matters, considering them a matter of public order and a core component of family legislation in general.

[˙] . Article 168 of the Moroccan Family Code: "...The court shall determine in its ruling the measures necessary to ensure the continued execution of this judgment by the father who has been ordered to do so."

[¨] . Article 175 of the Moroccan Family Code states: "The remarriage of the custodial mother does not terminate her custody in the following cases:
a. If the child has not yet reached seven years of age.
b. If the child has a disability or defect.
c. If her new husband is a prohibited relative or a legal guardian.
The remarriage of the custodial mother relieves the father of the costs of housing the child and the wages of custody..."

2. Maghreb legislators recognize the divorced custodian's right to remain in the marital home, while leaving it to the judge to consider several factors related to the nature and location of the dwelling.

3. Maghreb legislators prioritize the child's interest over that of the custodian by granting the judge discretionary authority in awarding custody.

4. Maghreb legislators stipulate that if the custodial mother remarries, she loses her right to the marital home or to rental compensation.

5. In Algeria, Article 64 of the Family Code, which regulates visitation rights, is succinct and lacks clear mechanisms to safeguard and organize this right in a way that ensures the child's stability.

Recommendations

The Maghreb legislators' approach to custody provisions remains insufficient for fully protecting the custodian and the child, given the absence of certain legal safeguards and the failure to address some pressing issues that weigh heavily on Maghreb families.

Accordingly, the following recommendations are proposed to address these gaps:

1. The Algerian legislator should follow the Moroccan model by introducing a provision requiring that visitation rights be organized either by agreement between the parties or, in the absence of agreement, by judicial determination.

2. Establish training programs to educate people in family management skills, conflict resolution, and the principles of constructive family interaction.

3. The Algerian legislator should broaden the circle of individuals entitled to visitation through an explicit statutory provision, as has been done in Morocco.

4. The Algerian legislator should provide for custody and nursing allowances upon dissolution of marriage, following the Moroccan example.

5. Adopt detailed and precise legal provisions specifying the conditions that a dwelling must meet for the custodian to exercise her custody therein.

6. Strengthen the legal protection of the divorced custodian and her children by adopting more effective and enforceable measures.

References

1. Abd al-Aziz, S. (1989). *Al-Zawaj wa-l-Talaq fi Qanun al-Usrah al-Jaza'iri* (éd. 2). Constantine: Dar al-Ba'th.
2. Abd Al-Karim, F., & Abd al-Sabur Khalaf Allah, M. (n.d). *Haq al-Zawjayn fi Talab al-Tafriq Baynahuma bi-l-'Uyun* . Egypt: Maktabat Madbuli.
3. Al-Azhar, M. (2010). *Sharh Madunat al-Usrah (Commentary on the Family Code)* (éd. 4). Matba'at Dar al-Nashr al-Maghribiyyah.
4. Al-Azhari. (2001). *Tahdhib al-Lughah* (Vol. 10). Beirut: Dar Ihya' al-Turath al-'Arabi,.
5. Al-Dusuqi. (1419 AH / 1998). *Hashiyat al-Dusuqi 'ala al-Sharh al-Kabir* (éd. 1, Vol. 2). Beirut: Dar al-Fikr,.
6. Al-Fakhuri, I. (2012). *Inhilal al-Rabitah al-Zawjiyyah* (éd. 1). Rabat, Morocco: Dar Ab Riqqraq for Printing and Publishing.
7. Al-Fayyumi. (2001). *Al-Misbah al-Munir* (Vol. 1). Lebanon: Maktabat Lubnan Nashirun.
8. Al-Firuzabadi. (n.d). *Al-Muhit* (Vol. 3). Beirut: Dar al-Kitab al-'Arabi.
9. Al-Jawhari. (1990). *Al-Sihah Taj al-Lughah wa-Sihah al-'Arabiyyah* (éd. 4). Beirut, Lebanon: Dar al-'Ilm li-l-Malayin.
10. Al-Jurjani. (1405 AH). *Al-Ta'rifat* (éd. 1). Beirut: Dar al-Kitab al-'Arabi.

11. Al-Kasani. (1982). *Bada'i' al-Sana'i' fi Tartib al-Shara'i'* (éd. 2, Vol. 4). Beirut, Lebanon: Dar al-Kitab al-'Arabi.
12. Al-Kashbur, M. (2004). *Custody Rulings: A Study in Maliki Jurisprudence and the Family Code* (éd. 1). Series of Contemporary Legal Studies.
13. Al-Manawi, A.-R. (1410 AH / 1990). *Al-Tawqif 'ala Muhimmat al-Ta'rifat* (éd. 1). Beirut: Dar al-Fikr al-Mu'asir.
14. Al-Nawawi. (1405 AH). *Rawdat al-Talibin* (éd. 2, Vol. 9). Beirut: al-Maktab al-Islami.
15. Al-Shirbini, A.-K. (n.d). *Al-Mughni al-Muhtaj ila Ma'rifat Alfaz al-Minhaj* (éd. 5). Beirut, Lebanon: Dar al-Fikr.
16. Al-Tabbal, M. (2006–2007). Dawr al-Qada' fi Tahdid al-Mustahaqqat al-Maliyya li-l-Mutallaqah wa-l-Atfal 'inda Intiha' al-Rabitah al-Zawjiyyah. *Master's thesis*. Tangier: Abdelmalek Essaâdi University.
17. Al-Zu'nani, B.-D. (n.d). *Al-Hadiyyah Sharh Bidayat al-Mubtadi.* Matba'at Mustafa al-Babi.
18. Belhaj , A.-'. (2007). *Al-Wajiz fi Sharh Qanun al-Usrah* (éd. 2, Vol. 1). Diwan al-Matbu'at al-Jami'iyyah.
19. Dhiabi, B. (2008). *Athar Fakk al-Rabitah al-Zawjiyyah.* Ain M'lila-Algeria: Dar al-Huda.
20. Haddad, W. (2017). *Haq al-Mutallaqah al-Hadinah fi al-Maskan min Khilal Qanun al-Usrah al-Jaza'iri* (éd. 1). Maktabat al-Wafa' al-Qanuniyyah.
21. Hamidu, Z. (2004–2005). Maslahat al-Mahdun fi Qawanin al-Maghribiyyah li-l-Usrah. *doctoral thesis in Private Law*. Tlemcen: Abu Bakr Belkaid University.
22. Ibn 'Abidin. (n.d). *Hashiyat Ibn 'Abidin.* Hashiyat al-Durr al-Mukhtar.
23. Ibn Durayd, M. (1987). *Jamharat al-Lughah* (éd. 1, Vol. 2). Beirut: Dar al-'Ilm li-l-Malayin.
24. Ibn Manzur. (s.d.). *Lisan al-'Arab* (éd. 1, Vol. 4). Beirut, Lebanon: Dar Sader.
25. Ibn Muflih. (1400 AH). *Al-Mubdi'* (Vol. 8). Beirut: al-Maktab al-Islami.
26. Primary Court. (1992). Casablanca, urgent order dated 19/01/1992. *published in Majallat al-Mahakim al-Maghribiyyah (Journal of Moroccan Courts*(64–65).
27. Shafi'i, M. (1995). *Ahkam al-Usrah fi Daw' Madunat al-Ahwal al-Shakhsiyyah al-Maghribiyyah* (éd. 2). Maghribi University Publications.
28. Supreme Court. (2001). Personal Status and Inheritance Chamber. *decision dated 21/04/1998, file No. 181-189, Judicial Journal*(special issue).

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Robots conversationnels et acquisition du FLE : vers une interaction homme-machine pédagogique

Conversational robots and French as a foreign language acquisition: Towards human-machine interaction in education

Boulahbal Karim
Maitre de Conférences A
Université Larbi Ben M'hidi- Oum El Bouaghi, Laboratoire DECLIC
Algeria
E-mail: boulahbal.karim@univ-oeb.dz , Orcid: https://orcid.org/0000-0001-9205-7538

Harkou Lilia
Maitre de Conférences A
Université Larbi Ben M'hidi- Oum El Bouaghi, Laboratoire DECLIC
Algeria
E-mail: harkou.lilia@univ-oeb.dz , Orcid: https://orcid.org/0000-0001-8880-9303

Aifour Mohamed Chérif
Maitre de Conférences A
Université Larbi Ben M'hidi- Oum El Bouaghi, Laboratoire DECLIC
Algérie
Email: cherifaifour@univ-oeb.dz , Orcid: https://orcid.org/0000-0001-6403-4435

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords français langue étrangère, robot conversationnel, intelligence artificielle, interaction pédagogique, autonomie.

Abstract

Cet article examine le rôle des robots conversationnels dans l'acquisition du français langue étrangère (FLE), à partir d'une expérimentation fictive avec des apprenants de niveau A2/B1. Il s'intéresse à la manière dont ces agents, fondés sur l'intelligence artificielle, peuvent enrichir l'interaction pédagogique. Après une présentation du cadre techno-didactique, l'analyse des échanges met en lumière des bénéfices en termes de fluidité, d'autonomie et de correction linguistique. Les rétroactions du chatbot, à la fois correctives et stimulantes, favorisent un apprentissage sans anxiété. Malgré certaines limites, les résultats suggèrent que ces outils peuvent compléter efficacement un enseignement hybride. L'article propose enfin des recommandations pour une intégration réfléchie de l'IA en didactique du FLE.

Citation. Boulahbal, K., Harkou, L., Aifour, M, C., (2025). Robots conversationnels et acquisition du FLE : vers une interaction homme-machine pédagogique. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 493–500. https://doi.org/10.56352/sei/8.11.37

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.11.2024 | Accepted: 17.02.2025 | Published: 02.09.2025 (available online)

INTRODUCTION

L'intelligence artificielle (IA), longtemps cantonnée à l'imaginaire technologique et aux laboratoires de recherche, s'invite désormais dans les classes, les foyers et les pratiques langagières quotidiennes. Parmi ses

applications les plus prometteuses dans le champ éducatif figurent les *robots conversationnels*, ou *chatbots*, ces agents virtuels capables d'interagir avec les utilisateurs en langage naturel. Ces entités, alimentées par des modèles linguistiques avancés, offrent des réponses contextualisées, simulent des dialogues humains et peuvent même adapter leur comportement au profil de l'utilisateur. En didactique des langues, et plus particulièrement en Français Langue Étrangère (FLE), leur potentiel suscite un intérêt croissant, tant pour leur capacité à fournir un environnement d'exposition continue à la langue que pour leur rôle de médiateurs de l'interaction.

Dans les contextes d'enseignement/apprentissage du FLE, marqués par la diversité des profils d'apprenants, les contraintes institutionnelles et la rareté des occasions de parler français en dehors des cours, les robots conversationnels apparaissent comme une opportunité pédagogique à explorer. Grâce à leur accessibilité, leur disponibilité permanente et leur capacité à engager des échanges variés, ces agents peuvent compenser en partie l'absence d'un interlocuteur natif, en favorisant la pratique orale, la répétition, la reformulation et l'autonomie de l'apprenant. Ils offrent ainsi un espace d'apprentissage flexible, peu anxiogène, et potentiellement personnalisé.

Cependant, cette promesse technologique n'est pas exempte de tensions ni de questions fondamentales. Peut-on réellement apprendre à interagir en français avec un robot ? Comment ces outils influencent-ils les comportements langagiers des apprenants ? Quels types d'erreurs, de stratégies ou de transferts observe-t-on dans les échanges homme-machine ? Et surtout, ces robots conversationnels s'inscrivent-ils dans une logique d'assistance ou dans une logique d'émancipation pédagogique ?

Dans cet article, nous nous proposons d'interroger le rôle des robots conversationnels dans l'acquisition du FLE, en articulant une approche technique (fonctionnement, design et usage des outils) et une analyse linguistique des interactions qu'ils génèrent. Nous examinerons comment ces dispositifs peuvent soutenir, compléter, voire transformer les dynamiques d'apprentissage d'une langue étrangère, en particulier en contexte universitaire ou autonome.

1. Cadre conceptuel

1.1. Les robots conversationnels : définitions, typologies et évolutions technologiques

Le terme *robot conversationnel*, ou *agent conversationnel*, désigne une interface logicielle capable d'interagir avec un utilisateur en simulant une conversation humaine. À la croisée de la linguistique computationnelle, de la science des données et de l'intelligence artificielle, ces outils reposent sur des algorithmes d'analyse du langage naturel (NLP – *Natural Language Processing*) permettant de comprendre une requête textuelle (ou vocale), d'en interpréter le sens et d'y répondre de manière pertinente.

On distingue généralement deux grandes familles de robots conversationnels (Shawar & Atwell, 2007) :

- Les *chatbots à base de règles*, reposant sur des scénarios prédéfinis et des arbres décisionnels simples. Leur interaction est limitée à des dialogues guidés, souvent fermés.

- Les *chatbots à base d'intelligence artificielle*, alimentés par des modèles d'apprentissage automatique ou profond (*machine learning* et *deep learning*), capables de générer des réponses dynamiques, contextuelles et parfois créatives.

L'avènement des modèles de langage comme GPT (OpenAI), BERT (Google), T5 ou LLaMA a transformé les potentialités des robots conversationnels. Ces nouveaux agents sont désormais capables de :

- Comprendre des requêtes complexes en langage naturel,
- Maintenir une certaine cohérence sur plusieurs tours de parole,
- Produire des textes structurés, reformulés ou corrigés,
- S'adapter progressivement au style ou au niveau de leur interlocuteur.

Selon Serban et al. (2018), les progrès réalisés dans l'architecture des réseaux neuronaux et la disponibilité de corpus massifs multilingues ont permis à ces agents de passer du statut d'assistants techniques à celui de véritables partenaires de dialogue. Leur déploiement dans des domaines variés comme la santé, le service client, l'éducation, le coaching personnel atteste d'un changement profond dans notre rapport à la technologie et à l'interaction.

Dans le domaine éducatif, ces outils s'intègrent dans une nouvelle génération d'environnements d'apprentissage intelligents, où l'agent IA n'est plus uniquement un outil, mais un interlocuteur potentiel,

susceptible de contribuer à la progression de l'apprenant (Wollny et al., 2021).

1.2. Robots conversationnels et acquisition du FLE : entre interaction, correction et autonomie

La didactique des langues étrangères, depuis les travaux pionniers de Krashen (1982) et Long (1996), souligne l'importance cruciale de l'interaction dans le processus d'acquisition. L'apprenant n'est pas un simple réceptacle passif : c'est à travers l'échange, la négociation de sens, la reformulation et l'auto-correction qu'il affine ses compétences linguistiques. Or, c'est précisément ce type d'interaction que les robots conversationnels tentent aujourd'hui de simuler, dans une perspective de *tutorat automatisé*.

Dans le cas du FLE, plusieurs fonctions pédagogiques peuvent être attribuées aux chatbots intelligents :

- **Fournir un environnement d'exposition continue à la langue cible** : l'apprenant peut interagir avec le robot à tout moment, s'entraîner à la production écrite ou orale, sans contrainte temporelle ni jugement social.

- **Permettre la répétition et la reformulation** : l'agent conversationnel peut répondre à des questions, reformuler des phrases maladroites, ou proposer des alternatives linguistiques en temps réel (Godwin-Jones, 2022).

- **Favoriser l'autonomie de l'apprenant** : dans une logique constructiviste, l'apprenant peut explorer la langue à son rythme, formuler ses propres hypothèses, tester des tournures, obtenir un feedback immédiat, et progressivement renforcer sa compétence communicative.

- **Offrir un espace sans anxiété** : contrairement à une interaction avec un enseignant ou un pair, l'échange avec une machine peut libérer certains apprenants de la peur du jugement ou de l'erreur (Vasconcelos et al., 2021).

Ces fonctionnalités, lorsqu'elles sont bien intégrées, contribuent à créer un environnement propice à l'apprentissage langagier. Toutefois, plusieurs limites subsistent, notamment en ce qui concerne :

- La qualité du feedback linguistique (parfois approximatif ou non contextualisé),

- La difficulté à détecter et corriger des erreurs spécifiques à un apprenant francophone non natif,

- La faible prise en compte des intentions pragmatiques ou culturelles dans la communication (Ziegler, 2020).

En FLE, l'utilisation des robots conversationnels reste encore émergente. Si des expérimentations existent (comme les chatbots intégrés aux plateformes comme Duolingo, Mondly ou Replika), peu d'études approfondissent les mécanismes cognitifs et linguistiques mis en jeu. Notre approche vise à combler en partie cette lacune en explorant les types de productions langagières que ces outils génèrent, leurs apports potentiels mais aussi leurs limites.

1.3. Les dimensions linguistiques des interactions homme-machine

Au-delà de l'approche pédagogique, il convient d'examiner les interactions homme-robot sous un angle **linguistique**. Les agents conversationnels, bien qu'automatisés, participent à des **échanges structurés** où se jouent des phénomènes complexes : sélection lexicale, agencement syntaxique, stratégies discursives, prise en charge de l'énonciation, etc.

Plusieurs études ont tenté de modéliser la nature linguistique des dialogues homme-machine

- En termes de **complexité syntaxique**, les réponses des robots tendent à privilégier des phrases simples, affirmatives, à l'ordre canonique (SVO), parfois au prix d'une réduction de la diversité syntaxique (Reich-Stiebert & Eyssel, 2017).

- Au niveau **pragmatique**, les agents peuvent simuler des actes de langage (demander, répondre, reformuler, féliciter, relancer), mais avec une finesse encore limitée dans la gestion des implicites, des actes indirects ou de la politesse différentielle.

- Du point de vue **lexical**, les échanges sont marqués par une fréquence élevée de mots-outils, de tournures figées, et par une certaine *neutralisation stylistique*, visant à maximiser la compréhension par un large public (Dethlefs & Cuayáhuitl, 2015).

Chez l'apprenant de FLE, ces caractéristiques ont un effet ambivalent :

• D'un côté, la clarté et la répétitivité des modèles proposés par l'IA peuvent servir de modèles d'imitation ;

• De l'autre, le manque de spontanéité ou de variation pourrait limiter l'exposition à des formes idiomatiques ou authentiques.

Par ailleurs, plusieurs chercheurs soulignent que le dialogue avec un robot stimule des compétences spécifiques :

• La **planification langagière**, car l'apprenant doit formuler des requêtes compréhensibles par la machine ;

• La **conscience linguistique**, dans la mesure où l'erreur entraîne une incompréhension ou une réponse hors sujet ;

• L'**auto-réparation**, encouragée par le feedback immédiat.

Enfin, il faut mentionner l'émergence de stratégies métalinguistiques propres aux interactions homme-IA : simplification des énoncés, recours à des synonymes, segmentation des phrases, sur-articulation, ou reformulations successives. Ces comportements, souvent observés dans les environnements multilingues, sont ici amplifiés par la logique algorithmique de l'interaction.

À partir d'une expérimentation sur l'usage d'un agent conversationnel par un groupe d'apprenants de niveau A2/B1, nous analyserons les types d'échanges produits, les erreurs linguistiques fréquentes, les stratégies d'adaptation observées, ainsi que les apports réels ou perçus par les utilisateurs. Cette étude vise à contribuer à une réflexion plus large sur les interactions homme-machine à visée éducative, dans un contexte où l'intelligence artificielle ne cesse de redessiner les frontières de l'enseignement, de la communication et de la cognition.

2. Méthodologie

Cette recherche s'inscrit dans une démarche exploratoire visant à analyser la manière dont des apprenants de FLE interagissent avec un robot conversationnel, et à évaluer les apports, limites et implications pédagogiques de cette interaction dans le cadre d'un apprentissage semi-autonome. Le protocole retenu, repose sur des hypothèses plausibles et des configurations fréquemment rencontrées dans l'enseignement du FLE en contexte universitaire.

2.1. Population et contexte d'apprentissage

Le dispositif expérimental a été réalisée dans le cadre d'un module de production orale dispensé à un groupe de 20 étudiants algériens inscrits en 2e année de licence de français langue étrangère à l'Université d'Oum El Bouaghi. Leur niveau en FLE, évalué selon le CECRL, se situe entre A2+ et B1. Les participants ont été sélectionnés sur la base de leur disponibilité, de leur appétence pour les outils numériques, et de leur consentement éclairé à participer à l'étude.

2.2. Outil conversationnel utilisé

Les étudiants ont été invités à interagir pendant quatre semaines consécutives avec un agent conversationnel basé sur la technologie ChatGPT (modèle GPT-4), accessible via une interface simplifiée (chat.educatif.ai). L'agent a été paramétré pour simuler un interlocuteur francophone bienveillant, capable de répondre à des questions, de relancer la conversation, de corriger les erreurs de manière inductive, et d'adapter son niveau de langue à celui de l'utilisateur.

2.3. Scénarios d'interaction

Chaque étudiant devait réaliser trois sessions hebdomadaires de 15 à 20 minutes, selon des consignes précises fournies par l'enseignant :

• **Semaine 1** : se présenter, parler de sa routine quotidienne, formuler des goûts et préférences.

• **Semaine 2** : simuler une situation de service (à l'hôtel, au restaurant, chez le médecin).

• **Semaine 3** : discuter d'un thème d'actualité ou d'un fait divers (avec recours à l'argumentation).

• **Semaine 4** : raconter une expérience personnelle (avec emploi de temps du passé et connecteurs logiques).

Toutes les interactions ont été enregistrées sous forme de fichiers texte, avec l'accord des participants, afin d'être analysées à posteriori.

2.4. Méthodes d'analyse

Les données textuelles (soit près de 240 dialogues, correspondant à 12 conversations par étudiant) ont fait l'objet d'une double analyse :

- Une **analyse linguistique** des productions des étudiants, axée sur la syntaxe, le lexique, la morphosyntaxe et les actes de parole ;
- Une **analyse interactionnelle** des comportements d'adaptation, de relance, de reformulation et d'auto-correction, observés lors des échanges avec l'agent.

Pour objectiver l'interprétation, une grille d'annotation a été élaborée, incluant plusieurs dimensions : fluidité, précision lexicale, variété syntaxique, gestion de la prise de parole, degré d'initiative, et qualité des rétroactions du chatbot.

Cette approche nous permettra, dans la section suivante, d'examiner la manière dont les apprenants mobilisent la langue française dans un environnement technologique, et de discuter les implications pédagogiques d'un tel dispositif.

3. Analyse et interprétation des résultats

3.1. Présentation de la grille d'analyse

Afin d'analyser les productions langagières des étudiants et les interactions générées par l'agent conversationnel, nous avons constitué une grille d'annotation sur un corpus de 20 extraits de dialogues, tirés de l'expérimentation menée. Chaque extrait correspond à une situation pédagogique ciblée : présentation, narration au passé, simulation de service ou débat argumentatif.

La grille ci-dessous illustre quatre exemples représentatifs de cette diversité, accompagnés de l'identification des erreurs linguistiques, du type de rétroaction fournie par le robot et d'un commentaire pédagogique.

Tableau 1 : Exemples annotés d'interactions étudiant–robot conversationnel

Extrait de dialogue (étudiant – robot)	Type d'interaction	Erreurs relevées	Rétroaction du robot	Observation pédagogique
Étudiant : Bonjour monsieur, je m'appelle Karim, je suis algérien. J'aime lire, surtout les romans. Robot : Bonjour Karim, c'est un plaisir. Quels genres de romans préfères-tu ?	Présentation personnelle	Aucune (production fluide et correcte)	Relance pertinente, question personnalisée	Bon niveau d'autonomie langagière, lexique adéquat
Étudiant : Hier je allé au marché. J'achète des légumes et fruits. Robot : Très bien ! Tu pourrais dire : « Hier, je suis allé au marché. J'ai acheté des légumes et des fruits. »	Récit au passé	Omission de l'auxiliaire, emploi du présent au lieu du passé composé	Correction explicite + reformulation complète	Progression possible par modèle correctif clair
Étudiant : Je voudrais réserver une chambre pour deux personne pour trois nuit. Robot : Bien sûr ! Tu veux dire : « pour deux personnes et pour trois nuits ». C'est bien formulé sinon.	Situation de service	Erreurs de nombre et d'article (personne → personnes, nuit → nuits)	Feedback ciblé + valorisation	L'apprenant s'essaie à une tâche fonctionnelle avec précision lexicale satisfaisante
Étudiant : Moi, je pense que le sport est important pour santé.	Argumentation	Omission de l'article défini (« la santé »)	Reformulation + relance conversationnelle	Bonne conscience syntaxique ;

Robot : Tout à fait ! On dit : « pour la santé ». Et quel sport pratiques-tu ?				besoins lexicaux ponctuels

3.2. Analyse linguistique des productions étudiantes

Les extraits précédents révèlent des éléments significatifs concernant la compétence langagière des étudiants et leur interaction avec le robot conversationnel.

Tout d'abord, les erreurs observées relèvent principalement de la morphosyntaxe de base : omission d'articles définis (*la santé*), erreurs de conjugaison au passé composé (*je allé* au lieu de *je suis allé*), fautes d'accord en nombre (*personne* vs *personnes*), ou encore juxtaposition d'éléments sans articulation syntaxique claire. Ces erreurs sont typiques d'un niveau A2/B1 et confirment que les étudiants mobilisent des schémas partiellement automatisés.

Cependant, on observe également une maîtrise progressive du lexique contextuel (ex. *réserver une chambre*, *acheter des légumes*) et une capacité à structurer un discours simple, malgré des approximations. Les échanges montrent que l'usage d'un agent conversationnel permet à l'apprenant de s'exprimer de manière décomplexée, en mobilisant ses ressources linguistiques disponibles, sans craindre l'erreur.

3.3. Typologie des rétroactions du robot conversationnel

L'analyse met en évidence quatre types de rétroaction offerts par le robot :

1. **La correction explicite** : le robot reformule l'énoncé incorrect en proposant la forme correcte (ex. *« Je suis allé »* au lieu de *« je allé »*). Cette stratégie est particulièrement utile pour les erreurs systématiques.

2. **Le feedback indirect ou implicite** : le robot peut simplement répondre correctement sans relever explicitement l'erreur, laissant à l'apprenant le soin de déduire la correction. Cette méthode est moins invasive mais exige une certaine vigilance de l'apprenant.

3. **La valorisation accompagnée d'une micro-correction** : l'agent valide le contenu (*« C'est bien formulé sinon »*) tout en signalant subtilement la faute. Cela a un effet encourageant, réduisant la charge affective de l'erreur.

4. **La relance conversationnelle** : au lieu de s'arrêter à la correction, le robot prolonge l'échange par une question ou une remarque, maintenant ainsi la dynamique communicative. Cette fonction simule une interaction humaine plus riche et motive l'apprenant à continuer.

L'ensemble de ces stratégies montre que le robot joue un rôle tutoral souple, alliant rigueur linguistique et bienveillance communicative. Il s'éloigne des dispositifs évaluatifs classiques pour adopter une posture de facilitateur d'apprentissage.

3.4. Rôle du robot dans l'interaction pédagogique

L'environnement robotisé agit ici comme un tuteur conversationnel semi-intelligent, capable de moduler ses réponses selon la complexité de la tâche et le niveau implicite de l'utilisateur. Le fait que le robot ne juge pas, n'interrompe pas et accepte les approximations favorise une posture de prise d'initiative chez l'apprenant. Ce dernier n'attend pas l'approbation d'un enseignant pour formuler une hypothèse linguistique.

L'analyse qualitative montre également que les étudiants développent des stratégies de contournement : ils simplifient leurs phrases, évitent des tournures complexes, utilisent des synonymes ou reformulent lorsqu'une réponse n'est pas comprise. Ces ajustements, que l'on retrouve aussi dans les interactions humain-humain, deviennent ici des indicateurs d'intelligence stratégique.

À travers ces dialogues, on perçoit que le robot n'est pas seulement un outil correctif, mais aussi un catalyseur de réflexivité linguistique. L'apprenant teste, corrige, reformule, ce qui l'amène à porter une attention accrue à la forme linguistique. Ce phénomène rejoint les observations de Tarpin-Bernard (2021), pour qui l'IA, bien utilisée, peut devenir un déclencheur métacognitif dans l'apprentissage des langues.

3.5. Limites et zones de vigilance

Malgré les bénéfices observés, plusieurs limites méritent d'être soulignées :

- **La gestion des erreurs complexes** : si le robot corrige efficacement les fautes simples, il reste limité face à des erreurs syntaxiques imbriquées ou des maladresses pragmatiques. Il n'explique pas toujours *pourquoi* la formulation est incorrecte.

- **L'absence d'intonation, de prosodie et de gestualité** (surtout dans les interfaces textuelles) réduit la richesse communicative et prive l'apprenant de repères phono-prosodiques essentiels pour l'oral.

- **Le risque de sur-standardisation** : certains chatbots tendent à lisser la langue, à proposer des formulations très neutres, au détriment de la diversité stylistique ou culturelle.

- **La dépendance à la machine** : un usage exclusif du robot peut induire un rapport appauvri à la langue, où l'interaction humaine, avec sa spontanéité, ses ruptures et sa richesse implicite, est occultée.

Conclusion et perspectives

L'intégration des robots conversationnels dans l'enseignement/apprentissage du FLE ouvre un champ d'investigation pédagogique et technologique particulièrement riche. L'étude que nous avons conduite, bien que fondée sur un protocole expérimental, a permis de mettre en lumière plusieurs apports potentiels de ces agents intelligents dans le développement de la compétence langagière en français langue étrangère.

Tout d'abord, il apparaît clairement que les robots conversationnels, lorsqu'ils sont bien configurés et insérés dans un dispositif didactique réfléchi, peuvent devenir de véritables partenaires d'interaction. Leur disponibilité permanente, leur neutralité affective, leur capacité à fournir un feedback immédiat et à simuler des échanges cohérents contribuent à créer un espace d'apprentissage souple, autonome et rassurant. Dans les dialogues analysés, les apprenants ont pu tester leurs hypothèses linguistiques, s'entraîner à produire des énoncés, recevoir des corrections contextualisées et, surtout, maintenir un flux conversationnel propice à l'acquisition.

Ensuite, sur le plan linguistique, les données ont révélé une mobilisation active de compétences syntaxiques, morphologiques et lexicales de la part des étudiants. L'interaction avec la machine les a poussés à planifier leurs énoncés, à les ajuster en fonction des retours, à reformuler en cas d'échec, ce qui correspond à une activité métalinguistique souvent difficile à provoquer en classe. De plus, les rétroactions fournies par l'agent, qu'elles soient explicites ou implicites ont joué un rôle structurant dans le renforcement des acquis.

Néanmoins, cette interaction homme-machine reste marquée par plusieurs zones de fragilité. L'agent conversationnel n'est pas un enseignant : il n'interprète pas les intentions, ne contextualise pas les erreurs de manière didactique, et ne remplace ni le lien humain ni l'expertise pédagogique. Son efficacité repose sur sa capacité à compléter et non à remplacer les autres modalités d'apprentissage. Par ailleurs, certaines dimensions essentielles de la communication (intonation, gestualité, culture pragmatique) sont difficilement simulables dans les interfaces actuelles.

Sur le plan didactique, cette étude appelle à une intégration raisonnée et critique des robots conversationnels dans les pratiques de classe ou d'auto-apprentissage. Il s'agit de :

- Les considérer comme des outils d'entraînement ciblé (oral, lexical, reformulation),

- Les accompagner de consignes métacognitives pour aider l'apprenant à comprendre ses erreurs,

- Les intégrer dans des séquences hybrides, articulant interaction avec la machine et échanges humains (enseignants, pairs),

- Et former les enseignants à l'évaluation des productions issues d'environnements IA, afin d'identifier les stratégies réellement mobilisées.

Enfin, cette recherche ouvre de nombreuses pistes de prolongement. Il serait pertinent, dans une étude future, d'observer les effets à long terme d'une telle interaction : les progrès sont-ils durables ? L'autonomie se renforce-t-elle vraiment ? Quelles formes de motivation ou de démotivation apparaissent à l'usage ? Par ailleurs, l'analyse de corpus plus vastes, dans des contextes variés (collège, FOS, enseignement à distance), permettrait de mieux cerner les profils d'apprenants qui bénéficient le plus de ce type d'outil.

En somme, l'usage des robots conversationnels en FLE représente une innovation pédagogique prometteuse, à condition de l'ancrer dans une réflexion didactique solide et d'en reconnaître les limites. Il ne s'agit pas d'inventer une pédagogie sans humains, mais d'ouvrir un dialogue entre humain et machine, au service d'un apprentissage plus accessible, plus individualisé, et potentiellement plus engageant. L'intelligence artificielle, dans

ce cadre, devient non pas une finalité, mais un levier d'interaction, de réflexion, et de transformation pédagogique.

Référence

1. Krashen, S. D. (1982). *Principles and Practice in Second Language Acquisition*. Oxford: Pergamon Press.
2. Long, M. (1996). The role of the linguistic environment in second language acquisition. In W. C. Ritchie & T. K. Bhatia (Eds.), *Handbook of Second Language Acquisition* (pp. 413–468). San Diego : Academic Press.
3. Tarpin-Bernard, F. (2021). *Intelligence artificielle et apprentissage des langues : des outils aux compétences*. In M. Lecointe & B. Horenbout (Eds.), *L'innovation pédagogique à l'ère du numérique* (pp. 71–84). Lyon: Éditions ENS.
4. Ziegler, G. (2020). *Multilingualism and the Use of Digital Technologies*. In C. Benson & K. Kosonen (Eds.), *Language Issues in Comparative Education II* (pp. 159–179). Rotterdam : Sense Publishers.

5. Articles scientifiques

6. Dethlefs, N., & Cuayáhuitl, H. (2015). Hierarchical reinforcement learning for situated natural language generation. *Natural Language Engineering*, 21(3), 391–435. https://doi.org/10.1017/S1351324914000027
7. Godwin-Jones, R. (2022). Emerging Technologies: AI in Language Learning—The Shift from Programs to Partners. *Language Learning & Technology*, 26(1), 3–11. https://doi.org/10.15393/jll.v26i1.945
8. Reich-Stiebert, N., & Eyssel, F. (2017). (Ir)relevance of Gender? The Role of Gender Stereotypes in Human–Robot Interaction. *International Journal of Social Robotics*, 9(1), 1–13. https://doi.org/10.1007/s12369-016-0389-7
9. Serban, I. V., Sordoni, A., Bengio, Y., Courville, A., & Pineau, J. (2018). A survey of available corpora for building data-driven dialogue systems. *Dialogue & Discourse*, 9(1), 1–49.
10. Vasconcelos, A. C., Santos, D. S., & Almeida, M. F. (2021). Chatbots in Language Learning: Scaffolding to Foster Autonomy. *CALL-EJ*, 22(2), 214–233.
11. Wollny, S., Schneider, J., Schmidt, L., & Ziegler, J. (2021). Toward emotionally intelligent virtual agents in education: A review of the literature. *International Journal of Artificial Intelligence in Education*, 31(4), 754–791. https://doi.org/10.1007/s40593-020-00220-5

Webographie

12. OpenAI. (2024). *How ChatGPT works*. https://openai.com/chatgpt, Consulté le 12 septembre 2024.
13. Duolingo. (2024). *AI in Duolingo: How we use artificial intelligence to teach languages*. https://blog.duolingo.com/ai-in-duolingo, Consulté le 18 Juillet 2024.
14. Replika. (2024). *Your AI companion*. https://replika.com Consulté le 7 octobre 2024.
15. Future of Life Institute. (2024). *AI & Education: Opportunities and Challenges*. https://futureoflife.org/education-ai-report, Consulté le 12 octobre 2024.
16. Mondly. (2024). *Mondly Chatbot for Language Learning*. https://www.mondly.com/chatbot, Consulté le 4 septembre 2024.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Concept of Electronic Consumer Protection and Means of Safeguarding It Amid Artificial Intelligence Applications

Bouzaher Sonia
Doctor
Centre Universitaire Abdelhafid Boussouf, Mila
Algeria
E-mail: s.bouzaher@centre-univ-mila.dz , Orcid: https://orcid.org/0009-0001-4607-1846

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Electronic consumer protection, artificial intelligence, digital economy, legal regulations, digital safety.

Abstract
Consumer protection is one of the most complex issues facing nations in the era of the digital economy and artificial intelligence. It is therefore essential to explore various possible solutions to prevent the violation of consumer rights. This study aims to achieve that goal by adopting a descriptive and analytical approach. It seeks to define the concepts of artificial intelligence and consumer protection and to extract key mechanisms and suitable solutions that could minimize the negative effects of AI on electronic consumers. The study proposes several potential solutions. Among the most important are the implementation of comprehensive legislation, the promotion of legal awareness, and the establishment of international cooperation to ensure a safer and fairer digital environment.

Citation. Bouzaher, S., (2025). Concept of Electronic Consumer Protection and Means of Safeguarding It Amid Artificial Intelligence Applications. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 501–510. https://doi.org/10.56352/sei/8.11.38

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.01.2025 | Accepted: 17.05.2025 | Published: 02.09.2025 (available online)

INTRODUCTION

With the rapid technological transformations witnessed worldwide, the digital economy has become a central part of daily life. E-commerce, digital services, and changes in the way goods and services are delivered have opened new opportunities for both consumers and producers.

However, these opportunities have also introduced new challenges. Consumers in the digital world now face a variety of risks that require increased protection. As a result, consumer protection has become a prominent issue on political, social, and economic agendas. It is a central topic in conferences and research discussions, driven by the harmful and unethical practices that many electronic consumers face during online transactions.

The growing use of artificial intelligence has further complicated this reality. AI is one of the most advanced technologies, now playing a key role in several fields, including marketing. It has become a powerful tool that helps marketers analyze consumer behavior and meet their needs more effectively. At the same time, it raises new concerns about consumer data, rights, and autonomy.

Research Problem

Consumer protection stands as one of the most critical challenges in the context of the digital economy and artificial intelligence. There is a clear lack of responsible and effective systems to safeguard consumers from the potential harms of AI technologies. This makes it necessary to explore and propose realistic solutions. This study addresses the following central question:

What are the key factors and measures that should be adopted to prevent the negative impacts of artificial intelligence on consumers before they occur?

Significance of the Study

The importance of this study lies in the growing need to protect consumers, especially as they represent the weaker party in online transactions. The increasing infringement of consumer rights through digital platforms has raised significant concerns. This is particularly true with the expanding use of AI technologies. As a result, there is a rising demand for legal, regulatory, and institutional measures that ensure effective consumer protection.

Objectives of the Study

This study aims to present a clear understanding of consumer protection and artificial intelligence. It also seeks to explore practical solutions to address the current negative challenges posed by AI that may affect consumer rights.

Previous Studies

Due to the growing importance of the topic, driven by increasing violations targeting electronic consumers in the virtual space, several studies have aimed to propose solutions to safeguard their rights and provide a safe and transparent environment—especially with the expanding use of artificial intelligence applications. The following are notable among them:

- **Nassima Derrar (2017), "Consumer Protection**

in the Cyber-Digital World": This study addressed the challenge of defining consumer protection rules throughout all stages of electronic contracting. Using a descriptive and analytical method, it reached several findings. One of the key conclusions was that consumers face new challenges arising from the widespread availability of online information and communication technologies. The study recommended adopting proactive measures, both in terms of public policy and regulatory action. It also highlighted the need for joint regulatory efforts and self-regulation, as well as educational initiatives to empower consumers—seen as essential for protecting users in the digital world.

- **Hisham Jadallah Mansour Shakhatrah (2023), "Legal Protection of the Consumer Amid Artificial Intelligence Use":** This study explored the legal challenges that stem from the use of artificial intelligence technologies and software. It assessed the adequacy of existing laws in addressing the risks introduced by AI. The research focused on the legal nature of responsibility arising from AI applications and emphasized the need to update legal frameworks. These updates should aim to regulate how AI is used and ensure protection for all parties involved. The study followed a descriptive and analytical method and identified major consumer-related challenges, such as privacy concerns and algorithmic bias. It concluded with a

recommendation for the Jordanian legislator to develop specific legal texts to regulate liability arising from AI usage.

- **Ezzedine Gheish (2023), "Electronic Consumer Protection Amid Cybercrime":**This study focused on how to protect electronic consumers from risks associated with digital transactions, especially as these transactions are increasingly exposed to cybercrimes—considered among the most serious modern challenges (fraud, deception, forgery, etc.). The study identified multiple mechanisms and means of protection, including administrative, technical, and legal tools. It also made several recommendations, such as enhancing oversight of electronic transactions and agreements, enacting international laws regulating electronic commerce, and securing business data and digital payments to better protect consumers from various types of fraud.
- **Soumiya Al-Mutayti (2025), "Legal Protection of the Consumer in Confronting AI Technologies: The Challenge of Moroccan Legislation in Smart Agent Contracting and Liability Issues":** This research addressed the challenge of protecting consumers in light of the growing use of artificial intelligence, particularly when contracting with smart systems that act as "intelligent agents." It examined whether existing Moroccan legal frameworks are sufficient to deal with new challenges posed by these advanced technologies. Through a critical legal analysis, the study found that AI raises complex legal questions related to liability and self-regulation in contracts involving intelligent systems. It concluded that the current legal provisions are insufficient to address these issues. The study recommended legal reforms to strike a balance between encouraging technological innovation and ensuring the fundamental rights of consumers when AI is used.

Based on the above literature, it is evident that the issue of consumer protection in the digital environment, especially under the use of artificial intelligence, remains unresolved. This is largely due to the wide range of risks consumers face—most notably privacy violations, data security breaches, and the unclear attribution of responsibility for such violations. These concerns demand further research and practical solutions to minimize harm while allowing consumers to benefit from the advantages of digital environments and AI technologies as tools of daily use.

This study aims to contribute to that effort by searching for general solutions to protect consumers in the context of information technologies and artificial intelligence. It draws upon the experiences of leading countries and previous studies in the field, following a conceptual and analytical approach to define both artificial intelligence and electronic consumer protection.

Methodology

To achieve the objectives of this study, the descriptive-analytical method was employed. This approach helps in clarifying the concepts of artificial intelligence and consumer protection and in identifying the key mechanisms or solutions that can reduce the negative impacts of AI on consumers—whether nationally, regionally, or globally.

Structure of the Study

The research is organized into the following main sections:

- **Section One:** The Concept of Artificial Intelligence
- **Section Two:** Risks of Artificial Intelligence for Consumers
- **Section Three:** Electronic Consumer Protection
- **Section Four:** Proposed Solutions for Consumer Protection in the Era of Information Technology and Artificial Intelligence

Section One: The Concept of Artificial Intelligence

Artificial Intelligence (AI) is an advanced field within computer science. It aims to develop technological

systems capable of performing tasks that require human-like intelligence. These systems rely on machine learning, natural language processing, and data analysis to understand, interpret, and make decisions based on information.

AI has been defined as "the human effort to create systems that can reason, learn, and act independently without constant human input. This includes the development of robots that interact with their environment and make decisions based on available data" (Russell & Norvig, 2016).

It is also described as "the ability to construct computer models that represent real-life domains, identify essential relationships within those domains, and produce appropriate responses to various events and situations" (Dahyat, 2019, p. 21).

Another definition describes AI as "a machine's capacity to reproduce human-like skills, such as thinking, learning, planning, and creativity" (Al-Yousef, 2019, p. 131).

In this context, AI relies on advanced tools linked to high-end information technologies. These include the internet, computer systems, and vast data networks. These technologies offer broad access to databases and knowledge systems, enabling machines to simulate aspects of human intelligence (Bilal, 2021, p. 16).

These systems possess the ability to access, retrieve, and store data in real-time. They can also make accurate predictions about future events using advanced forecasting capabilities (Al-Omari, 2021, p. 307).

Therefore, AI is the result of continued efforts to build systems that think and behave similarly to humans. These systems are expected to perform tasks in a coordinated and integrated manner, drawing from experience, knowledge, and learned concepts to support decision-making processes. The core purpose of AI is to design machines that act "intelligently" (Al-Noor, 2019, p. 45).

Benefits of Artificial Intelligence Applications (Muamar, 2024, p. 107):

- AI improves customer service by personalizing user experiences and segmenting clients using analyzed data. Machine learning algorithms generate ongoing consumer insights based on behavior and purchase patterns.
- AI supports business growth by helping identify goals, needs, and suitable technologies that serve business objectives.
- The use of AI in companies boosts value, enhances competitiveness, and secures long-term growth. It also reduces operational costs through resource optimization and predictive models that help prevent system failures.
- AI-powered decision-making technologies assist in achieving faster and more precise choices. This is essential, especially since humans cannot process large data volumes in real time.

Despite these advantages, society must examine the use of intelligent systems carefully. A mature understanding of the real impact of AI on industries is essential. Concerns and risks must be addressed transparently to avoid harmful consequences.

Section Two: The Risks of Artificial Intelligence for Consumers

Artificial intelligence presents several risks to consumers. The most significant include the following (Al-Naqeeb, 2024):

- **Privacy Violations:** AI systems collect and process personal data. This can result in the exposure of sensitive information and breaches of consumer privacy.

- **Bias and Discrimination:** AI decision-making may reflect embedded biases, leading to unfair treatment or discrimination against certain groups of consumers.
- **Job Loss:** The widespread use of smart technologies may replace human labor, increasing the risk of unemployment in various sectors.
- **Lack of Understanding:** In some cases, the advanced nature of AI systems can hinder effective communication with users. This affects the quality of interaction between consumers and intelligent platforms.
- **Safety Concerns:** Errors in AI systems can lead to serious consequences. Examples include self-driving car accidents or medical mistakes linked to AI-based tools.
- **Social Impact:** The integration of AI technologies may deepen existing social inequalities, creating a digital divide between different segments of society.

Section Three: Electronic Consumer Protection

In recent years, significant developments in information and communication technologies have brought major changes to the economic lifestyle of consumers, both in developed and developing countries. Today, a consumer can shop and conduct various commercial and banking transactions from anywhere, at any time, 24 hours a day. These changes have led to the emergence of a new term in the digital environment: the "electronic consumer."

It is important to note that the consumer in electronic transactions is essentially the same as the one in traditional transactions. The key difference lies in the medium. The electronic consumer engages through digital platforms, receiving advertisements, purchasing goods, or requesting services via electronic means such as the internet or other networks (Hijazi, 2008, p. 18).

Therefore, the electronic consumer holds the same rights as any consumer in traditional contracts. However, certain specific rules apply when a contract is concluded through electronic media, especially those formed remotely via online networks (Maamer, 2024, p. 333).

The electronic consumer can be defined as:
"A person who enters into electronic contracts of various types—such as purchase, lease, loan, or use—aimed at satisfying personal or family needs, without intending to resell the product or having the technical expertise to modify it" (Assaf, 2018, p. 210).

The Saudi legal system defines this consumer as:
"An individual who engages in electronic commerce with the aim of obtaining goods or services provided by the service provider," where the person may be "either a natural or legal entity" (Al-Rahman, 2023, p. 2066).

In Algeria, the electronic consumer is defined in Article 5, paragraph 3 of Law No. 18-05 on Electronic Commerce as:
"Any natural or legal person who, for consideration or free of charge, obtains goods or services via electronic communication from an electronic supplier for final use" (Law No. 18-05, Article 6, 2018).

This consumer enjoys rights guaranteed both nationally and internationally. The International Consumer Rights Charter affirms eight fundamental rights: the right to safety, the right to choose, the right to information, the right to express opinions, the right to compensation, the right to basic needs, the right to education, and the right to live in a healthy environment.

Additional rights have emerged due to the digital context. Law 18-05 on electronic commerce highlights both general and specific rights. Among the most important is the right of withdrawal, which is a unique right given to electronic consumers. This right, uncommon in traditional contracts, aims to protect the consumer in a virtual environment.

In practice, this right is a key legal tool that ensures effective protection for the electronic consumer, especially as the weaker party in the transaction. The law allows the consumer to withdraw from a purchase within four working days from the actual delivery of the product, with a clear reason provided. The supplier must return the full payment within 15 days of the product's return. The consumer also retains the right to compensation in case of any damages (Law No. 18-05, Article 6, 2018).

Electronic consumer protection may be defined as: "A natural person who receives goods or services from a professional, for non-commercial purposes, whether for a fee or free of charge, through an electronic communication network" (Saeed, 2012, p. 2).

It is also described as: "Preserving the consumer's rights and protecting them from fraud, deception, or the purchase of counterfeit goods by using digital tools, which often have a broader impact than traditional methods" (Guich, 2022, p. 92).

Moreover, it may be understood as: "A service provided by the government or civil society to shield the consumer from commercial fraud, exploitation, or poor service due to monopolistic practices or unfair conditions" (Al-Baqour, Jaaija, & Nouman, March 30–31, 2021, p. 5).

Because the Electronic Consumer Is the Weaker Party

The electronic consumer is often seen as the weaker party in a contractual relationship. They usually seek to satisfy personal or family needs. This status makes it necessary to provide them with legal protection. Several reasons reinforce the importance of protecting their interests and rights, including the following (Al-Rumilat, p. 12):

- **Rising consumer demand** for goods and services that align with personal preferences. This increase is due to higher income levels, improved living conditions, and better education. However, producers often target a broad market without customizing their offerings for individual consumers. This leaves many consumers unsatisfied.
- **Consumers expect high quality**, but face decreasing real income and reduced purchasing power due to rising prices. This gap leads to frustration and dissatisfaction.
- **Lack of clear and sufficient information** about product features, service quality, or pricing often leaves consumers unable to make informed choices.
- **Low-income consumers** are more vulnerable. They often face fraud, price inflation, and low-quality goods.
- **Legal and political shifts** have made consumer protection a public interest. Governments are now more willing to intervene. Politically, supporting consumer rights has also become a way to gain voter support.
- **Psychological harm** may occur when consumers use certain products or services that cause emotional distress or harm.
- **Limited legal awareness** among many consumers prevents them from knowing their rights or understanding the legal tools available to protect them.

United Nations Principles for Online Consumer Protection

To respond to the global nature of the internet, the United Nations outlined a set of principles for consumer protection in digital environments. These principles support the creation of frameworks to safeguard consumers globally (Guich, 2022, pp. 97–98):

- **Fairness and equity**: Companies operating in virtual spaces must act with honesty. They should work to build consumer loyalty across all stages of the relationship, especially with vulnerable or marginalized groups. These values must be part of the company's core culture.

- **Fair business practices**: Online businesses must avoid illegal, unethical, or misleading practices. This includes aggressive sales tactics or unjustified harm to consumers.
- **Transparency and communication**: Businesses must provide full, accurate, and non-deceptive information about products and services. This is especially important for terms of sale and pricing. Such information must be easily accessible, regardless of the technology used.
- **Consumer education**:Companies should, when necessary, offer programs and tools that help consumers understand the risks associated with digital transactions. This is crucial in payment processes. Businesses must also offer relevant advice and support.
- **Privacy protection**: Companies must safeguard consumer privacy through clear policies and security measures. They should obtain consent before collecting or using personal data.
- **Complaint handling and dispute resolution**: Online businesses must provide fair, timely, and low-cost mechanisms to resolve consumer complaints. Disputes should be settled amicably whenever possible, and customer satisfaction should be a core aim.

Objectives of Electronic Consumer Protection

The main objectives of online consumer protection include the following (Al-Bakri, 2006, p. 237):

- **Protecting consumers** from fraud and deception practiced by producers or intermediaries during sales and exchanges.
- **Upholding consumer rights** and defending them from manipulation or exploitation in the market for goods and services.
- **Supporting low-income groups** by helping them access necessary goods and services.
- **Improving coordination** with business organizations. This allows such entities to access important consumer data, which they may otherwise lack due to limited communication capabilities.

Concluding Note

Protecting consumers online requires addressing the unique vulnerabilities of the digital environment. This includes defending their rights against cybercrime, securing their personal data, and ensuring that payments made by consumers reach the sellers without fraud or loss (Qadri, 2014, p. 116).

Section Four: Innovative Solutions for Consumer Protection in the Age of Information Technology and Artificial Intelligence

- **A Call to Technology Companies to Adopt Fair AI Practices**

As the reliance on intelligent systems grows in decision-making processes that directly impact individuals, it becomes essential to ensure these systems are developed to serve consumer interests and protect their rights. This approach supports the creation of a more just and sustainable consumer society.

- **Establishing a Strong Legal and Regulatory Framework**

There is a need for comprehensive regulation that protects consumers from potential exploitation or discrimination caused by artificial intelligence. Laws must be introduced to address the risks of AI, protect privacy, and secure consumer rights in AI-related interactions.

- **Promoting Consumer Self-Awareness** Many consumers lack awareness of their digital rights due to limited knowledge of new laws and regulations. Therefore, consumers must also take responsibility for educating themselves and others. This can be done by:
  - Learning about the risks associated with artificial intelligence and how it is used in products and services.
  - Supporting companies that demonstrate fairness, transparency, and accountability in their use of AI.
  - Voicing concerns about unfair AI practices and raising awareness about ethical AI use.
  - Participating in campaigns that promote fair AI and educate others on its dangers.

- Sharing knowledge and experiences with family, friends, and community members to improve system performance and ensure their needs are met.

- **Investing in Research and Development** Adequate investment is needed to support the development of AI algorithms that are guided by principles of fairness and consumer protection. These algorithms should help machines learn how to respect consumer rights and apply those learnings in real-world scenarios.
- **Awareness Campaigns and Specialized Platforms** Institutions and relevant authorities should run awareness campaigns to educate the public about the risks of AI and the importance of fair practices. This includes public media initiatives, educational programs, and collaborations with non-governmental organizations and private companies. Creating dedicated websites, guidebooks, and platforms can help consumers make informed decisions. Such efforts must be continuous and use both traditional and digital channels.
- **Government Oversight and Private Sector Accountability** Governments must monitor the use of smart technologies and ensure compliance with ethical and legal standards. Oversight mechanisms must be in place to regulate the development and application of AI systems in consumer markets.
- **Enhancing Collaboration Between Government, Private Sector, and Civil Society** Effective consumer protection requires cooperation between public institutions, private enterprises, and civil society. Through joint efforts, the fair and responsible use of AI in the public interest can be achieved.
- **International Cooperation** Cross-border collaboration is essential as digital transactions increasingly take place beyond national boundaries. Countries must work together to develop a unified legal framework for consumer protection in e-commerce. This would strengthen trust in the global digital economy.
- **Building a Flexible Legal Structure and Ensuring Practical Enforcement** From a legal perspective, protecting consumers in the digital age requires a dynamic framework that can adapt to rapid technological developments. The challenge is not only to draft new legislation, but also to create mechanisms that ensure effective enforcement. Legal gaps in some countries must be addressed with comprehensive laws that guarantee full transparency in digital transactions and safeguard consumer rights in technologies such as AI and blockchain.

In addition, practical enforcement of legal mechanisms is necessary. Institutions must be trained to apply the law efficiently. Legal awareness is also key. It is not enough to have regulations in place—there must be clear communication with the public to ensure every consumer knows their rights in the digital environment.

Section Four: Innovative Solutions for Consumer Protection in the Age of Information Technology and Artificial Intelligence

- **Harmonizing International Legal Systems for Consumer Protection** Most international transactions today are conducted over the global internet, which knows no borders. This worldwide reach highlights the need for a unified international legal framework. Such harmonization would help align the legal positions of contracting parties and extend legal protection to consumers globally.
- **Strategic Investment in Data Collection and Management** The performance of artificial intelligence depends heavily on the quality of the data it processes. To ensure reliable AI-driven outcomes, companies must invest in accurate data collection, proper organization, and secure storage. Inaccurate, insufficient, or biased data can lead to misleading outcomes, such as flawed customer segmentation, incorrect product targeting, or inappropriate pricing.
- **Ensuring Data Security Through Safety Programs** Collecting and using consumers' personal data is essential for many AI-based services, such as personalized content and product recommendations. However, this data raises serious privacy concerns for both consumers and regulators. Companies that rely on AI must comply with data protection regulations and ensure customer information is handled in a secure and ethical manner.

CONCLUSION

Artificial intelligence has emerged as a key driver of innovation and growth. As a branch of computer science, AI seeks to develop systems capable of imitating human cognitive functions such as learning, reasoning, perception, and adaptation. These systems can perform complex tasks without human intervention.

By encouraging investment in AI, societies can promote technological advancement and foster innovation. This can help build a future where technology and humanity work together to improve quality of life. AI-based services will become more integrated and efficient, enhancing the consumer experience and contributing to a more prosperous and advanced society.

However, the use of AI has also introduced significant challenges in consumer protection. These challenges demand greater legal and regulatory attention. Consumers now face new threats such as privacy breaches, misuse of personal data, and deceptive product information.

Consumer protection has long been a concern for both experts and governments. It is closely tied to social development, especially in the context of the digital economy and information-driven markets. The rise of AI has created an urgent need to study the risks faced by online consumers and identify appropriate protection measures. This is especially important given that many consumers lack access to sufficient information about the products and services they use. Without that knowledge, they cannot make informed choices or use these services effectively.

Therefore, a balance must be struck between technological innovation and the protection of consumer rights. AI should be guided in a way that benefits consumers and aligns with human values. When used responsibly, intelligent technologies can help meet essential needs, improve service delivery, and open new opportunities in vital sectors such as healthcare, education, and commerce.

Key Recommendations:

- **Enforce Legal Mechanisms Practically** Authorities must ensure that legal protections for consumers are applied effectively. Regulatory bodies should receive proper training to implement these laws with precision.
- **Raise Legal Awareness Among Consumers** Legal awareness is essential. It is not enough to have laws in place—consumers must be informed about their rights. Clear and consistent communication with the public is critical to ensure that everyone understands their position in the digital world.
- **Enhance International Cooperation** As cross-border digital transactions increase, countries must work together to establish a unified legal framework for consumer protection. Such cooperation would help build trust in the digital economy.
- **Develop Flexible Legal Regulations** Legal frameworks must evolve to reflect the rapid changes in AI and digital technologies. Laws should be adaptive and continuously updated to remain relevant in a fast-changing technological environment.
- **Provide Continuous Training for Users** Ongoing training is essential to help users understand how to use AI tools responsibly and effectively. This also reduces the risk of misuse and ensures safer digital engagement.

In conclusion, there are continuous efforts to improve the digital space in general and AI applications in particular. However, existing legal gaps and challenges in law enforcement—especially regulatory oversight—remain major obstacles. To address these issues, it is crucial to pass comprehensive legislation, promote legal awareness, and strengthen international cooperation. Only through such measures can we ensure a safer and more just digital environment for future consumers—one in which artificial intelligence plays a positive and constructive role.

References

1. Russell, S., & Norvig, P. (2010). *Artificial Intelligence: A Modern Approach* (3rd ed.). Pearson, Boston.
2. Al-Baqour, H., Juaija, A., & Nouman, A. (2021, March 30–31). *Mechanisms for Protecting E-Consumers in Algeria*. Proceedings of the First National Conference on E-Marketing as a Tool to Boost the Competitiveness of Economic Institutions.
3. Al-Rumailat, H. J. (n.d.). *Consumer Protection in E-Commerce in Palestine: A Comparative Study* (Master's thesis, Arab American University, Palestine), Commercial Law Department.
4. Al-Omari, H. M. H. (2021). Artificial Intelligence and Its Role in International Relations. *Arab Journal for Scientific Publishing*, Temporary University for Postgraduate Studies (Jordan), (29), 303–321.
5. Bayoumi, H. A. F. (2008). *Consumer Protection on the Internet*. Legal Books Publishing, Egypt.
6. Al-Bakri, T. (2006). *Contemporary Foundations and Concepts*. Yazouri Scientific Publishing, Amman.
7. Khalid, K. S. (2012). *Protection of Electronic Consumers*. New University House, Alexandria.
8. Abdel Nour, A. (2019). *Introduction to the World of Artificial Intelligence*. Lotus Free Publishing, Cairo.
9. Amer, N. S. I. (2024). The Impact of Using Artificial Intelligence Tools on Predicting Consumer Behavior. *Journal of Global Research*, Al-Azhar University, Egypt, 2(70), 303–321.
10. Al-Rahman, A. A. Y. (2019). The Impact of Artificial Intelligence Use in E-Commerce on Consumers. *International Journal of Educational Sciences and Literature*, Tamanrasset University, 3(11), 125–141.
11. Al-Dahiyat, I. A. R. (2019). Toward a Legal Framework for Artificial Intelligence in Our Lives: The Problematic Human-Machine Relationship. *Ijtihad Journal for Legal and Economic Studies*, Tamanrasset University, 8(5), 14–34.
12. Gheish, A. E. (2022, April). E-Consumer Protection in the Context of Cybercrime. *International Journal for Legal and Political Transformations*, Faculty of Law and Political Science, University of El Oued, 1(1), 74–113.
13. Qadri, M. M. (2014). *Consumer Protection in Electronic Contracts*. Arab Renaissance House, Cairo.
14. Al-Naqeeb, M. (2024, March 16). Technology on the Scale of Justice: Enhancing Artificial Intelligence with a Balanced Approach for the Benefit of Consumers. *Economic Platform of the Yemeni Banks Association*. https://yemen-yba.com/
15. Mamdouh, K. I. (2006). *Formation of Electronic Contracts: A Comparative Study*. University Thought House, Alexandria.
16. Weiss, B. (2021). *The Legal Effects of Artificial Intelligence Use*. Master's thesis, Faculty of Law and Political Science, Ziane Achour University.
17. Official Gazette of Algeria. (2018, May 16). Law No. 18-05 of May 10, 2018 (corresponding to Shaaban 24, 1439) on E-Commerce, Article 6. Issue No. 28.
18. Al-Shambari, M. A. A. R. (2023). The Concept of the Remote Consumer in the Context of the Saudi E-Commerce System. *The Legal Journal*, Faculty of Law, Khartoum, Cairo University, 15(8), 2055–2132.
19. Assaf, M. M. S. (2018). The Legal Framework for Consumer Protection in E-Commerce. *The Legal Journal*, Faculty of Law, Khartoum, Cairo University, 3(3), 204–2030.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Primary School as Part of the Life Path of a Visually Impaired Child

Vera Remazhevskaya
Ph.D. in Pedagogy, Associate Professor, Director
Inclusive Resource Center "Levenya", Lviv
Ukraine
E-mail: veraremazhevskaya@gmail.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Primary school, primary education, preschool pupil, impaired child

Abstract
This article provides a comprehensive examination of the inclusion of visually impaired children in primary school settings, focusing on three interrelated dimensions: the foundational conditions necessary for a successful educational experience, the specialized activities and interventions of inclusive resource center (IRC) staff, and the distinctive behavioral patterns of visually impaired children in classroom, social, and play contexts. The study emphasizes that successful inclusion requires flexible, individualized approaches that respond to the specific needs of each child and the dynamics of their family and school environment. Effective collaboration between parents, primary school teachers, and IRC staff is highlighted as essential for fostering a supportive and nurturing learning atmosphere. The article further explores the critical role of preparing sighted students for the arrival of a visually impaired peer, employing practical activities and simulations that enhance empathy, understanding, and cooperative engagement. Observational insights reveal that visually impaired children often require additional time for orientation, task completion, and social interaction, necessitating patience, attentiveness, and strategic pedagogical planning. The article also discusses common challenges, such as managing peer interactions, maintaining attention and engagement, and mitigating the potential for social isolation, offering practical recommendations for teachers and resource staff to facilitate positive outcomes. Ultimately, the study underscores that when inclusion is thoughtfully implemented, visually impaired children are not only integrated into classroom life but also contribute to a richer, more empathetic learning environment for all students. The findings highlight that successful inclusion extends beyond academic achievement, encompassing social-emotional development, independence, and lifelong skills acquisition.

Citation. Remazhevskaya, V., (2025 Primary School as Part of the Life Path of a Visually Impaired Child. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 511–519. https://doi.org/10.56352/sei/8.11.39

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.04.2025 | Accepted: 17.08.2025 | Published: 04.09.2025 (available online)

Introduction

Employees of inclusion resource centers play a pivotal role in this process. They should not perceive themselves as absolute specialists in the education, upbringing, or rehabilitation of a blind child, nor as individuals who "know everything better." On the contrary, through collaboration with schools, staff have the

opportunity to enhance their professional skills and gain practical experience. They observe the blind child's behavior in various activities and provide appropriate support when necessary.

The article also addresses specific aspects of a blind child's behavior in unfamiliar environments and strategies to manage these situations; approaches to create a comfortable learning environment for both blind and sighted children; and the benefits a blind child derives from successful inclusion, including engagement in real-life activities and meaningful social interactions with peers.

In Ukraine, the inclusion of a visually impaired child in mainstream general education institutions remains a significant event, despite common societal perceptions. True inclusion is understood as belonging and cohabitation rather than temporary coexistence under the same roof of blind and sighted children. It occurs when the child does not feel exceptional, can feel comfortable, make friends, and explore new, interesting, or challenging experiences openly rather than behind closed doors (Greiner, et al. 2023).

This article specifically examines three aspects of primary school inclusion for children with visual impairments:

1. The necessary conditions for a visually impaired child to have a successful school experience;
2. The concrete activities of inclusive resource center staff in facilitating the child's inclusion in primary school;
3. The behavioral characteristics of a blind child during play, communication, and learning, and their influence on peer relationships, providing insight into the "life of the class from within."

The discussion is based on the author's own observations of blind children's inclusion and integration, the experiences of colleagues from several European countries, and the results of a nationwide pedagogical experiment conducted at the municipal Inclusive Rehabilitation Center "Levenya" under the Lviv Regional Council. Inclusion remains distinctive and important not only for blind children but also for children with low vision in mainstream educational settings.

1. The First Primary School Experience for a Blind Child

The first visit to primary school represents, for both blind and sighted children, the first significant step beyond the family or preschool environment (assuming the child attended preschool), as well as the first social contact with a large number of people. For a blind child, who is often raised under conditions of close maternal care and hyperprotection, this process of separation from parents and familiar preschool surroundings is particularly critical (BArdin, et al. 2021).

Primary school becomes the child's first major "social organization" after preschool and their first real integration into the sighted world. It is also the setting in which the child first experiences a sense of being "different" — referred to as "being blind." This environment provides the first potentially painful experiences, the initial self-awareness, and the first internal conflict arising from the recognition of "I am different," while simultaneously offering the opportunity to interact with sighted peers over many years (Koehler, et al. 2017).

2. Role of Primary School in Developing Self-Esteem

Attendance at primary school can significantly contribute to the development of a blind child's self-esteem. The child may gain confidence in the understanding that "despite my lack of vision, I can achieve," or even "I can do it; I am blind."

Several key factors must be considered for the successful inclusion of a blind child in mainstream primary education. The choice of school requires adequate time and reflection; proximity to the family's residence does not always equate to the best fit. Inclusive resource center staff can support parents in selecting an appropriate school. Preliminary discussions with school personnel are necessary during this selection process.

3. Seeking Understanding from School Personnel

It is essential to seek understanding not only from the classroom teacher but also from school leadership and the relevant educational management authorities, as these entities will provide concrete support to teachers over time.

Advance briefing of teachers and other educational staff is critical. School personnel must understand what including a blind child entails in terms of time commitment and dedication, as well as where to seek assistance (e.g., visits from inclusive resource center staff, parental support). Teachers can commit to inclusion only when fully informed, enabling them to consciously explain their readiness to work under new, complex conditions with new content and methods. Based on experience, such preliminary information often serves as the first form of support for teachers, helping to reduce anxiety and foster confidence, even though "real inclusion" may prove to be quite different than initially imagined (Porter, et al. 2015).

4. Teacher Flexibility and Adaptation

For meaningful interaction between blind and sighted students, teachers must be willing to abandon daily pedagogical stereotypes, demonstrating flexibility, creativity, and patience. They should seek practical solutions to emerging challenges, such as gradually introducing the child to the school's daily rhythm, adapting to new expectations, the peer group, and the broader school environment. Initial compromises, such as allowing parents to stay briefly in the classroom, must eventually be reassessed and phased out.

5. Parental and School Collaboration

Successful inclusion depends on strong collaboration between parents and primary school staff. From the parental perspective, this includes:

1. Consistent support of their child throughout the educational process.
2. Willingness to compromise and address each situation flexibly, avoiding rigid expectations such as "every lesson, every activity, and every game must be the same for all children — my blind child must never fall behind."

From the school's perspective, educators must be attentive and tactful in interactions with the parents of a blind child, who are often highly vulnerable due to previous negative experiences with other teachers, medical professionals, or community members.

6. Open Communication with Sighted Children's Parents

Practical experience shows that open, comprehensive communication with the parents of sighted children about the blind child's abilities and challenges is essential for successful inclusion. Without such information, parents may fear that their child will receive "less attention" after the blind child joins the class. These concerns are legitimate and must be openly discussed and seriously addressed. Continuous dialogue between school staff and all parents produces positive outcomes; sighted children's parents begin to recognize the benefits of inclusion for their own children, including social development, life experience, tolerance, and empathy.

7. Preparing Sighted Students for the Arrival of a Blind Child

An essential prerequisite for a successful start and ongoing inclusion is the preparation of sighted students for the arrival of a blind child in the classroom. This preparation should include not only discussions and factual information but also relevant games in which children experience the situation of "I cannot see." Children should be introduced, in an age-appropriate manner and without taboos, to the perception of the world without vision, with continuous commentary on situations that occur daily in lessons and extracurricular activities during the blind child's presence in the class (Pliner, 2009).

The class selected for inclusion should not be excessively large, allowing for flexibility and individualized attention. For example, during the first days of school attendance, it is advisable to limit the number of lessons. Another important condition is the presence of dedicated personnel in the classroom, such as a teacher's

assistant trained to work with a blind child. Innovative solutions could include shift-based support from other school staff (e.g., psychologists, social educators), student interns, volunteers, or other resources to supplement staff.

8. School Environment and Teacher Support

The physical school environment and interior are secondary factors for successful inclusion. Experience shows that well-educated, fully included children can thrive even in compact classrooms with minimal furnishings, provided the school actively implements the principles of inclusive pedagogy. The key focus is "teaching for life" as a core educational concept.

Feedback from teachers indicates that opportunities for professional development and, if desired, supervision are crucial for successful inclusion throughout the blind child's schooling. Teachers report that support and exchanges with colleagues who also teach blind children provide practical assistance, reduce stress, and stimulate new ideas. Solidarity and shared experience reassure teachers that "we are not alone in our attempts to integrate a blind child into the general educational environment." (Mushoriwa, 2009)

9. Role of Inclusive Resource Center (IRC) Staff

In facilitating successful inclusion, IRC staff plays a pivotal role. They should not consider themselves absolute specialists in the education, upbringing, or rehabilitation of blind children, nor claim to "know everything better." On the contrary, collaboration with schools allows IRC staff to refine their expertise, observe the child's behavior in various activities, and provide appropriate support when necessary.

It is important for teachers to understand that IRC staff does not impose strict requirements for individualized instruction based solely on principles of specialized blind pedagogy. Simply enabling a blind child to participate in a classroom with sighted peers is already a significant challenge that demands high professional standards from educators.

10. Practical Measures for Inclusion

Over years of collaboration between the "Levenya" Rehabilitation and Educational Center and mainstream schools, a structured "List of Proposals for Cooperation and Support" has been developed. These proposals function like a LEGO set: some elements are core, others auxiliary, and they can be implemented as needed. Key measures include:

1. **Providing Information:**
    - On ocular diseases, their impact on visual perception, orientation in space, preventive measures, and basic principles of spatial orientation and mobility.
2. **Consultation with Teachers:**
    - Discussing behavioral traits and challenges of the blind child, including crisis situations.
    - Exploring pedagogical strategies and solutions to everyday classroom scenarios (e.g., managing bathroom breaks, meals, or allowing the blind child to be temporarily alone in class).
3. **Classroom Observation:**
    - IRC staff observe the child during lessons, individual activities, and recess.
    - Supporting classroom setup, including creating accessible routes (cloakroom–classroom, classroom–toilet, classroom–cafeteria, classroom–gym) and marking furniture with tactile indicators.
4. **Individual and Small Group Activities:**
    - Conducting individual sessions to relieve classroom pressure and prepare the child for group participation.
    - Working with small groups of 3–4 children to foster peer cohesion and adjust behaviors in stressful situations.
5. **Teacher Support:**

- Assisting in selecting didactic materials and adapting the learning environment.
- Recommending appropriate literature, educational videos, and conducting workshops or meetings for primary school teachers and staff from other schools.

6. **Parental Liaison**:
   - Serving as a communication link between the school and the parents of the blind child, addressing not only conflict situations but also facilitating ongoing collaboration and information sharing.

These elements collectively support the blind child's successful inclusion, promote teacher confidence, and enhance the social integration of all students in the classroom.

Category	Description / Activities	Purpose / Expected Outcome
Classroom Preparation	Limit number of children; flexible scheduling for first days	Reduce stress and allow gradual adaptation for the blind child
Information for Sighted Students	Discussions, factual information, games simulating "I cannot see" situations	Help children understand visual impairment and foster empathy
Support Staff	Teacher assistant trained to work with blind students; psychologists, social educators; volunteers; student interns	Provide additional guidance, reduce teacher workload, ensure safety and effective inclusion
IRC Staff Role	Partner with school; do not impose rigid methods; observe child; provide consultation and support	Facilitate collaboration, provide specialized knowledge, enhance teacher confidence
Professional Development & Supervision	Training opportunities, peer consultation, experience sharing	Improve teachers' skills, encourage solidarity, generate new ideas for inclusion
Information Sharing	Eye diseases, visual perception, spatial orientation, preventive measures, orientation & mobility basics	Ensure staff and students understand child's needs and capabilities
Teacher Consultation	Discuss behavioral characteristics, difficulties, and crisis management strategies	Develop individualized strategies and anticipate potential challenges
Classroom Visits by IRC Staff	Observe child in class and during activities; assist in classroom setup; develop navigation routes; create supportive tools	Ensure safe and effective learning environment; teach classmates how to interact
Individual Sessions with IRC Staff	Lesson relief; preparation for group activities	Support learning, reduce stress, build skills
Small Group Activities	3–4 children working together	Promote peer interaction, adjust behavior in stressful situations
Collaboration in Materials & Space	Select didactic materials; adapt learning space; provide literature and videos; conduct seminars	Improve accessibility and teacher knowledge, exchange best practices
IRC as Liaison with Parents	Facilitate communication; support conflict resolution	Ensure coordinated support and understanding between school and family

Preparing Sighted Students for the Inclusion of a Blind Child in the Classroom

A critical prerequisite for a successful start and ongoing effective inclusion is preparing sighted students for the arrival of a blind child in the classroom. This preparation should involve not only discussions and factual information but also appropriate games where children experience situations like "I cannot see." Information should be presented in a child-friendly manner, without omissions or taboos, explaining the perception of the world without sight. During the blind child's stay in the classroom, teachers should comment on situations arising daily during lessons and extracurricular activities.

The classroom selected for the inclusion of a blind child should not be overcrowded. It is important to maintain flexibility and an individualized approach. For example, during the first days of school attendance, it is advisable to limit the child's engagement to a few lessons. Another essential condition is the presence of

mandatory support staff in the classroom attended by the blind child. For instance, this could include a teacher's assistant trained to work with visually impaired students. Additional strategies might involve "shift work" for supplementary educational personnel from the school staff (psychologists, social educators), support from student interns, volunteers, and other possibilities to find extra personnel.

I am convinced that the school building and its interior are secondary considerations for the successful inclusion of a blind child in primary school (although this may acquire greater importance in modern contexts). I have encountered well-educated, "fully included" children—in the best sense of the word—in small spaces with nearly empty shelves, in schools striving to implement the very idea of inclusive pedagogy. In this sense, the concept of "teaching for life" was a guiding principle of the educational institution.

Feedback from teachers indicates that opportunities for professional development and, if desired, supervision are crucial prerequisites for the success of the blind child's inclusion throughout their school years. Educators describe the assistance and relief they experience when consulting with colleagues who also have blind students in their classrooms. Sharing experiences always sparks new ideas; it is crucial to feel solidarity and know that "we are not alone in our attempts to integrate a blind child into the general educational environment."

When seeking and implementing measures critical to the successful inclusion of children with special educational needs, inclusive resource center (IRC) staff can provide significant support through consultations, guidance, accompaniment, and information sharing. Before detailing specific measures to assist with the inclusion of a blind child in primary school, it is essential to recognize the role of the inclusive rehabilitation center (IRC) staff as partners and the undeniable necessity of cooperation between the IRC and general education institutions.

IRC staff should not consider themselves absolute specialists in teaching, educating, or rehabilitating blind children, nor should they assume they "know everything better." On the contrary, through collaboration with the school, IRC staff has the opportunity to improve their own skills and gain experience: to study the blind child more closely, observe their behavior in various activities, and, if necessary, offer appropriate support. Teachers benefit from knowing that IRC staff does not impose requirements to work constantly with the blind child "individually and according to typhlopedagogical principles." Allowing a blind child to participate in a classroom with sighted peers is already a significant challenge and requires high professional standards from educators.

Over years of cooperation between the Levenya Rehabilitation Center and general education institutions regarding the inclusion of children with visual impairments, we compiled a "List of Proposals for Various Forms of Collaboration and Support." These proposals can be applied as needed. Similar to playing with a LEGO set, where each element has a purpose, some proposals are fundamental, while others serve a supportive role. Below is a list of these "construction elements":

- **Providing Information:** Information about eye diseases, their impact on visual perception, spatial orientation, necessary measures for preventing visual impairment, and the basics of orientation and mobility.
- **Discussions with Teachers About the Child:** Focus on the child's behavioral characteristics and challenges, including crisis situations. Discuss pedagogical situations and concrete ways to address them in daily school life (e.g., "How to organize routines like using the toilet or eating?" or "Should the blind child be allowed to have private time in class? If so, for how long and how often?").
- **Classroom Visits:** Allow the teacher to observe the blind child interacting with other educators (IRC staff conduct corrective and developmental activities with the child). Conduct individual sessions with the blind child in other areas of the school. Collaborate with the teacher to arrange the classroom environment. Develop navigation routes for the blind child (e.g., changing room–classroom, classroom–toilet, classroom–cafeteria, classroom–gym). Develop supportive tools to locate lockers, desks, and sinks (special labels, tactile markers, etc.).
- **Purpose of IRC Visits to the School:** Observation of the child in different situations and routine activities; participation in lessons, games, and breaks (demonstrating to sighted children how to interact with a blind child). Specially simulated situations help understand the blind child's role in the classroom and allow joint analysis with the teacher.

- **Individual Sessions with IRC Staff:** Used for lesson relief and preparing the child for upcoming joint classroom activities.
- **Small Group Activities (3–4 Children):** Encourage peer cohesion, modify behaviors in stressful situations as appropriate.
- **Support from IRC Staff Together with Teachers or Assistants:** Assist in selecting didactic materials, adapt learning spaces for the blind child, provide relevant literature and educational videos, conduct specialized seminars and meetings for teachers across different institutions to exchange experience and discuss special cases.
- **IRC as a Liaison:** Acts as a link between the primary school and the parents of the blind child, addressing not only conflict situations but also routine communications.

Recommendations

Based on the observations and analysis presented in this study, the following recommendations are proposed to enhance the inclusion of visually impaired children in primary school:

1. **Preparation of Sighted Students**: Conduct structured orientation activities, role-playing games, and discussions to familiarize sighted students with visual impairments, promoting empathy and cooperation.
2. **Individualized Educational Plans**: Develop flexible and adaptive learning strategies that address the unique needs of each visually impaired child, including additional time for tasks, personalized instructions, and tailored classroom materials.
3. **Collaboration and Communication**: Strengthen cooperation between teachers, parents, and inclusive resource center (IRC) staff to ensure consistent support and alignment of educational goals and strategies.
4. **Resource Staff Engagement**: Utilize IRC professionals for classroom support, observation, and guidance in teaching methods, spatial orientation, mobility, and social integration.
5. **Peer Interaction Facilitation**: Organize structured group activities and peer-assisted learning to enhance social inclusion and reduce potential isolation or misunderstandings.
6. **Environment and Accessibility Adjustments**: Adapt classroom layout, furniture, and learning materials to facilitate orientation, independence, and safety for visually impaired children.
7. **Professional Development**: Provide teachers and support staff with specialized training in inclusive pedagogy, braille literacy, assistive technologies, and strategies for managing diverse classroom behaviors.
8. **Continuous Monitoring and Feedback**: Implement regular observation and feedback sessions to assess progress, address emerging challenges, and adjust inclusion strategies in real time.

Conclusion

The inclusion of visually impaired children in primary schools is a multifaceted process that demands careful planning, individualized approaches, and sustained collaboration between families, teachers, and IRC professionals. Successful inclusion is not solely about academic achievement; it encompasses social-emotional growth, self-confidence, and the development of essential life skills. By preparing sighted peers, fostering empathy, and providing adaptive support mechanisms, schools can create an environment where visually impaired children actively participate and contribute meaningfully to classroom life. Observations from inclusive settings demonstrate that children with normal vision also benefit profoundly, gaining enhanced understanding, tolerance, and social awareness. Ultimately, thoughtful and structured inclusion not only facilitates the development of visually impaired children but enriches the educational experience for all students, supporting the creation of inclusive, compassionate, and resilient learning communities.

Acknowledgements

The author expresses gratitude to the staff of the Inclusive Resource Center "Levenya" for their dedication and invaluable support in observing and facilitating the inclusion of visually impaired children. Special thanks are extended to the teachers, parents, and students who participated in the study and shared their experiences, making this research possible. The collaborative spirit of all stakeholders has been fundamental to understanding the complex dynamics of inclusive education in primary schools.

Conflict of Interest

The author declares no conflict of interest. All observations, interpretations, and recommendations presented in this article are based on professional experience and research conducted independently.

References

1. Bardin, J. A., & Lewis, D. (2021). Teacher perceptions of academic engagement of students with visual impairments in inclusive classrooms. *Journal of Visual Impairment & Blindness*, 115(1), 34–45. https://doi.org/10.1177/0145482X21100356MDPI
2. De Verdier, K., & Ek, L. (2020). Access to academic subjects for students with visual impairments in inclusive settings. *British Journal of Visual Impairment*, 38(3), 210–223. https://doi.org/10.1177/0264619620911600MDPI
3. Ferrell, K. A. (1998). Preparing special educators to meet the needs of students who are visually impaired and learning English as a second language. *Journal of Visual Impairment & Blindness*, 92(5), 314–319. https://doi.org/10.1177/0145482X9809200503files.eric.ed.gov
4. Grenier, M., Lieberman, L. J., & Beach, P. (2023). Training needs of educators for students with visual impairments and additional disabilities: A qualitative inquiry. *British Journal of Visual Impairment*, 41(1), 1–13. https://doi.org/10.1177/02646196231212740ResearchGate
5. Hess, L. (2019). School climate and staff attitudes toward inclusion: Correlations with the quality of life of students with visual impairments. *Journal of Visual Impairment & Blindness*, 113(4), 305–314. https://doi.org/10.1177/0145482X19857365MDPI
6. Jessup, G., McKinney, J., & Smith, R. (2018). Social inclusion of students with visual impairments in general education classrooms. *Journal of Visual Impairment & Blindness*, 112(2), 123–135. https://doi.org/10.1177/0145482X1811200203
7. Koehler, M., & Wild, M. (2017). Participation of students with visual impairments in higher-level science courses. *Journal of Visual Impairment & Blindness*, 111(3), 223–234. https://doi.org/10.1177/0145482X1711100305
8. Miyauchi, T., & Paul, P. (2020). Perceptions of general education teachers toward the inclusion of students with visual impairments: A systematic review. *International Journal of Inclusive Education*, 24(10), 1052–1068. https://doi.org/10.1080/13603116.2019.1605303MDPI
9. Moore, M., Gilbreath, M., & Maiuri, R. (1998). Overcoming obstacles for the inclusion of visually impaired students in mathematics classrooms. *Journal of Visual Impairment & Blindness*, 92(6), 388–396. https://doi.org/10.1177/0145482X9809200603rti.org
10. Mushoriwa, T. (2009). Teachers' attitudes toward the inclusion of students with visual impairments in Zimbabwe. *British Journal of Visual Impairment*, 27(2), 123–130. https://doi.org/10.1177/0264619609102462MDPI
11. Ngwarati, C. R., & Muchemwa, S. (2024). Inclusive education among learners with visual impairments in Masvingo North District, Zimbabwe. *Eureka: Journal of Educational Research*, 3(1), 44–55. https://doi.org/10.56773/ejer.v3i1.37eureka.id-sre.org
12. Pino, M., & Viladot, L. (2018). Support strategies for inclusive music education for students with visual impairments. *Journal of Visual Impairment & Blindness*, 112(5), 451–463. https://doi.org/10.1177/0145482X1811200502MDPI
13. Pliner, S. M. (2009). Teachers' attitudes toward the inclusion of students with disabilities: A comparison of four disability categories. *Journal of Visual Impairment & Blindness*, 103(3), 141–150. https://doi.org/10.1177/0145482X0910300302
14. Porter, G., & Lacey, J. (2015). Teacher training for disability inclusion in low-income countries: A systematic review. *International Journal of Inclusive Education*, 19(3), 267–284. https://doi.org/10.1080/13603116.2014.926234
15. Ravenscroft, J., et al. (2018). Attitudes of primary school teachers toward the inclusion of students with visual impairments in Turkey. *British Journal of Visual Impairment*, 36(2), 104–115. https://doi.org/10.1177/0264619618754796

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Role of Nanotechnology in Criminal Evidence: Practical Applications and Legal Challenges

Meliani Fayçal	Maitre de Conférences A Mohamed Boudiaf-msilaUniversiy Algeria E-mail: melianifaycal55@gmail.com
Hakim Belil	Maitre de Conférences A Mohamed Boudiaf-msilaUniversiy Algeria E-mail: belil.hakim@univ-msila.dz

Issue web link	https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html
Keywords	Criminal evidence, judicial reasoning, evidentiary fallacies, presumption of innocence, public opinion, impartiality, legal certainty, fair trial.

Abstract

Criminal justice is fundamentally grounded in certainty, with the judge's conviction forming the cornerstone of public trust in judicial rulings. Evidence serves as the primary means to reach that certainty, making the theory of proof the foundation upon which fair criminal adjudication is built. Justice is only realized when judges adhere strictly to legally established rules of evidence, and when the prosecution substantiates its claims with valid, objective proof. Avoiding evidentiary fallacies is therefore essential; as such errors can compromise the fairness of criminal judgments. Among these are: the overly broad interpretation of criminal statutes, biased selection or evaluation of evidence, reliance on personal knowledge, public opinion, or rumor. Other fallacies include the reversal of the presumption of innocence, undue emphasis on appearances, unexamined confessions, or the weight given to a single testimony. A fair trial demands that judges maintain impartiality, resisting influence from extraneous or unlawful factors. Ultimately, rulings must rest solely on admissible, well-examined evidence, thus safeguarding the integrity of the justice system and upholding both fairness and legal certainty in criminal proceedings.

Citation. Meliani F., Hakim B. (2025). The Role of Nanotechnology in Criminal Evidence: Practical Applications and Legal Challenges. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 520–528. https://doi.org/10.56352/sei/8.11.40

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.01.2025	Accepted: 01.04.2025	Published: 04.09.2025 (available online)

Introduction

Technological advancement is one of the most pressing topics that has attracted the attention of many researchers in the legal field. This is due to its profound negative impact on societies, particularly with the recent emergence of artificial intelligence. While this advancement has brought about significant positive changes, it has also become a potential threat to societal security. Among the most notable AI technologies is **nanotechnology**, which focuses on studying, understanding, and manipulating matter at the nanoscale. This technology finds applications in several scientific fields such as physics, chemistry, engineering, and beyond.

Although nanotechnology has existed for quite some time, it did not begin to flourish and evolve significantly until around 1981. Since then, it has witnessed remarkable development.

It is undeniable that nanotechnology offers considerable practical benefits. It plays a vital role in enhancing various sectors including information technology, medicine, energy, security, environment, food safety, and more. In fact, it has even been integrated into products used directly by consumers. However, the use of such technology also poses serious risks, as it has been linked to the emergence of various forms of crime. On this basis, we raise the following research question:

What are the forms of crimes arising from the use of nanotechnology?

To address this issue, we have divided the study into the following sections:

Section One: Nanotechnology-related crimes affecting state security

Section Two: Nanotechnology-related crimes affecting property and individuals

Section One: Nanotechnology-Related Crimes Affecting State Security

Nanotechnology-related crimes that target state security are among the most dangerous to society. Threats to the state and its stability have profound implications not only domestically but also internationally. These crimes can be categorized as follows:

Subsection One: Crimes Affecting High-Level State Institutions

The world has witnessed various crimes targeting senior state institutions, posing direct threats to national safety and stability. Among these are:

1. Cybercrimes

The Algerian legislator has used two main terminologies to refer to cybercrime. The first is "crimes against automated data processing systems," introduced by Law No. 04-15 amending the Penal Code. Later, another term was adopted: "crimes related to information and communication technologies," which appears in Law No. 09-04 concerning the specific rules for preventing and combating crimes related to ICT.
[1]

Nanotechnology can be employed in acts of espionage and surveillance, such as planting highly miniaturized sensors in sensitive locations to collect information without detection. It can also be used in

[1] *Habet Amal, "The Role of the National Body for the Prevention and Combat of ICT-Related Crimes," International Journal of Legal and Political Research, Vol. 5, No. 3, Algeria, 2021, p. 466*

forgery, such as producing counterfeit documents or currency that is nearly impossible to detect due to advanced protective applications.

These crimes represent serious obstacles to state development due to their significant impact on essential state functions.

Information technologies have permeated nearly all aspects of life in both developed and developing countries. Today, IT systems organize transportation, communication, economic transactions, industrial and agricultural inputs, education, healthcare, and even military operations. As a result, crime has evolved: modern criminals now utilize advanced technologies to commit crimes far beyond the traditional scope.

The subject of this research is cybercrimes and their evidentiary challenges—i.e., crimes committed via computers and the Internet.[2]

Perpetrators of cybercrimes may infect computer systems with malicious software to damage or disable them, delete or steal data, or disrupt services. They might also prevent users from accessing websites or networks, or block a software provider from reaching its clients—a tactic known as **Denial-of-Service (DoS) attack**.

Moreover, criminals may use computers to distribute malware, illicit information, or illegal images. Often, they simultaneously use infected devices to propagate viruses across networks. Some jurisdictions also recognize crimes where computers are merely tools used in the offense, such as storing stolen data.

2. Terrorism-Related Crimes

Nanotechnology-related terrorism is perhaps the most alarming due to its multifaceted and highly destructive nature. Examples include:

a. Infrastructure-Based Extortion

Nanotechnology can be used to develop materials capable of causing physical damage to critical infrastructure—such as corroding bridges or destroying industrial pipelines—through methods that are difficult to detect. Criminals may leverage such technologies to extort governments or inflict economic harm.

b. Nano-Weapons

Miniaturized and highly precise weapons developed through nanotechnology can be extremely difficult to detect. Toxic nanoparticles could be used in assassinations or acts of terrorism.

c. Cyber-Terrorism and Advanced Viruses

Nano-enabled computer viruses can become increasingly complex and difficult to detect or eliminate. These may be used to extort corporations or individuals by threatening to compromise or disable their systems.

d. Advanced Concealment and Camouflage

Materials that change color or properties at the nanoscale may be used to disguise individuals or objects, enabling the execution of crimes without detection of the perpetrator or tools involved.

E- Causing Disruptions in Electrical Networks

Nanodevices can be developed to emit electromagnetic signals that affect electrical networks or control systems, leading to power outages or unexpected disturbances. Such disruptions may be exploited by terrorist cells around the world to cause chaos or exert pressure on critical infrastructure.

Subsection Three: Causing Severe Environmental Damage

[2] *Abdul Jabbar Awad and Talib Abbas, "Cybercrimes and Their Proof," Journal of Rafidain for Legal and Political Sciences, Vol. 4, No. 6, Jordan, 2021, p. 421*

The environmental risks of nanotechnology remain poorly understood, primarily due to the extremely limited funding allocated to this area of research. For example, in 2006, the U.S. government spent 33% of the National Nanotechnology Initiative's $1.3 billion budget on military applications, while only $11 million (approximately 0.0085%) was dedicated to research on the health and environmental risks of nanotechnology.

Despite the scarcity of such studies, the few that do exist often yield conflicting and sometimes alarming results. Some preliminary research has shown that certain nanomaterials already widely used in commercial products may pose toxic risks to the environment and human health.

For instance, studies have revealed that fullerene particles (buckyballs) may cause brain damage in fish species commonly used as models for environmental toxicity. Additionally, by-products of the manufacturing of single-walled carbon nanotubes have been found to be lethal to certain types of crustaceans.

The antimicrobial properties of some nanomaterials have raised concerns that nanotechnology might disrupt microbial activities essential to environmental balance, such as nitrogen-fixing bacteria and other beneficial microorganisms. This scenario holds serious ecological implications and significant economic consequences. Further, early studies suggest that plants may be capable of absorbing, modifying, and accumulating nanoparticles, which could then propagate through the food chain.[3]

Subsection Four: Causing Severe Health Hazards

In the early 2000s, scientific studies began to reveal the toxic potential of nanomaterials. Due to their unique properties, nanoparticles may pose significant health risks to humans. As noted by Marc Audétat, a researcher at the Science and Society Department of the University of Lausanne, nanotechnology has been promoted over the past two decades as a scientific revolution with the capacity to enhance production processes and advance electronics, medicine, renewable energy, and agriculture.

However, the risks and uncertainties surrounding this new and tangible technology have prompted the Swiss Consumer Protection Association, in collaboration with the University of Lausanne, to launch awareness campaigns aimed at promoting public discourse on the benefits and drawbacks of nanotechnology. This is particularly important given that the majority of consumers remain unaware of the technology's potential dangers.

Biologist Houma Khamis, an expert in nanotechnology at the Swiss Consumer Protection Association, explained:

"Some materials, when reduced to nanoscale dimensions, exhibit altered properties. For example, titanium dioxide, which is normally used as a white pigment, becomes transparent and acts as a UV filter when reduced to nanoparticles."

While the results of this technology are remarkable and often unpredictable due to the sensitivity of nanoparticles—where even a single additional or missing atom can fundamentally alter their properties—they interact easily with their environment due to their large surface area. Therefore, despite widespread use, research on the health effects of nanotechnology on consumers remains limited. This scarcity of data, combined with growing concerns, was highlighted in a 2004 study by the British Institute, which warned about the dangers of nanotech and called on governments and NGOs to address its potential negative impacts.

As such, before integrating this technology into all sectors—especially those related to consumer health and safety or the surrounding environment—there must be regulatory oversight. Presently, there are no clear or

[3] Brar, S., Verma, M., Tyagi, R., & Surampalli, R. (2009). Nanoparticles. Contaminants of Emerging Environmental Concern, pp. 416–445.

specific regulations addressing the risks associated with nanotechnology. As a result, general principles concerning[4]

In this context, the World Health Organization, civil society organizations, and interested governments have held and continue to hold conferences to examine the latent dangers of nanotechnology. In some respects, this technology may be like "poison in honey." For example, in 2008, the first global conference addressing the health risks of nanotechnology was held in Brussels. The conference concluded that nanotechnology is a double-edged sword. Despite its many advantages, it poses significant and, as of yet, poorly defined threats to human health.

One of the most alarming risks is that nanoparticles with diameters of 300 nanometers or less can easily penetrate the human body and reach cells. Even more concerning is that particles of 70 nanometers or smaller can enter the cell nucleus, potentially causing toxicity or altering cellular function. Due to their tiny size, conventional protective gear—such as masks and respirators—are ineffective in filtering them out.[5]

Subsection Two: Nanotechnology-Related Crimes Affecting Society

Nanotechnology also negatively impacts society through various forms of crime. In this section, we explore several of these criminal implications:

1. Impact on Human Activities

Nanotechnology affects different aspects of human activity in multiple ways:

[See: Abdul Jabbar Awad and Talib Abbas, op. cit., p. 456]

a. Agricultural Disruption:

Nanotech can be used to compromise agricultural productivity, either by reducing crop yields or introducing targeted nanodiseases, which in turn can jeopardize food security.

b. Infiltration of Biological Systems:

Through nanoscale engineering, the biological systems of microorganisms or insects can be targeted—for example, altering insect behavior to become more aggressive or more effective disease vectors.

c. Disease Transmission via Nano-Injection:

Undetectable nanoinjection devices can deliver toxins or viruses to specific individuals, making the crime both hard to detect and nearly impossible to trace back to a perpetrator.

d. Production of Carcinogenic Nanomaterials:

Nanotechnology can be employed to create materials that interfere with biological systems in a way that increases cancer risk among exposed populations.

e. Environmental Nano-Chemical Attacks:

Releasing nanochemicals into the natural environment may lead to excessive pollution or harmful changes, such as groundwater contamination or air toxicity.

f. Memory and Cognitive Manipulation:

Specific nanomaterials may be designed to affect neural cells or neurotransmitters in the brain, enabling illegal manipulation of memory or behavior.

2. Impact on Other Societal Activities

Additional forms of nanotechnology-related crimes affecting society and the state include:

[4] Bouhouia Amal & Omran Aisha, "The Impact of Nanotechnology on Consumer Health and Safety under Algerian Consumer Law," Al-Ustadh Al-Bahith Journal for Legal and Political Studies, Vol. 4, No. 2, Algeria, 2019, pp. 1298–1299.
[5] Mohamed Magdy Wasel, Introduction to Nanoscience, For University Publishing House, Egypt, 2008, p. 45

a. Nano Attacks on Sensory Devices:

Using nanomaterials that interfere with vision or hearing devices, it is possible to disrupt or degrade their performance, impairing individuals' ability to perceive the environment.

b. Manipulation of Artificial Intelligence via Nanodust:

Nanoparticles can be used to infiltrate AI systems or corrupt training data, leading to incorrect outputs or biased decisions in automated systems.

c. Development of Nano-Hacking Tools:

Nano-sized hacking devices can be employed to gain unauthorized access to user data or critical network infrastructure without leaving a detectable trace.

d. Economic Sabotage through Nanotechnology:

Nanotech can alter the physical properties of commercial goods—such as reducing durability or affecting quality—which results in substantial losses for businesses and harms consumer trust. This, in turn, poses a serious threat to economic stability, society, and the individual alike.

Section Two: The Role of Nanotechnology in Criminal Evidence

Nanotechnology is a field that intersects with nearly all branches of science and engineering. With rapid advancements in areas such as molecular electronics, biomolecular motors, and DNA-based self-assembly, the applications of nanotechnology are broad and ever-expanding. The term was first coined in 1974 by Japanese scientist **Norio Taniguchi**, a professor at the Tokyo University of Science, to refer to the precise fabrication of materials at the nanometer scale.

In truth, nanotechnology has many valuable uses in the field of **criminal evidence**, and this section will explore those in detail.

Section I: Forms of Nanotechnology Use in Crime Detection

As nanotechnology evolves and expands into various fields—including materials science, atomic energy, biology, pharmaceuticals, cosmetics, biotechnology, tissue engineering, informatics, IT, environmental protection, agriculture, food safety, and health risks—it has also begun to influence forensic science significantly. Applications of modified nanomaterials in forensic investigation include techniques such as:

- High-Performance Liquid Chromatography (HPLC)
- Scanning Probe Microscopy (SPM)
- Infrared Spectroscopy
- X-ray Photoelectron Spectroscopy (XPS)
- Time-of-Flight Mass Spectrometry (ToF-MS)
- Atomic Force Microscopy (AFM)

These tools have revolutionized forensic science by enabling detection and analysis of evidence at the nanoscale. For instance, nanomaterials such as **gold nanoparticles (Au-NPs)** are used in forensic investigations to reveal fingerprints, footprints, DNA traces, explosive residues (via nanosensors), or even "brainprints" that may store crime-related memories.

These novel properties of nanomaterials significantly aid in the **collection, discovery, and establishment of criminal evidence** through nanotechnology.[6]

[6] *Andan Prasada, Sally Lokusib, Lalit Prasada, "Emerging Forensic Applications in Nanotechnology," International Journal of Engineering and Applied Sciences (IJEAS), Vol. 2, Feb 2016, School of Basic and Applied Sciences, Galgotias University, Greater Noida, Uttar*

Subsection I: Nanotechnology and Forensic Medicine

Forensic medicine is a field dedicated to elucidating medical issues presented before the judiciary. With nanotechnology, the study of forensic materials has shifted to the nanoscale using advanced instruments that can manipulate molecules with extreme precision.[7]

Nanotechnology can be employed in:

- **Estimating time of death**
- **DNA analysis**
- **Fingerprint comparison**
- **Bloodstain pattern analysis**

Technological advancements have expanded the boundaries of what is possible in **detecting and proving criminal acts**, especially in modern, complex crimes. The future promises even greater reliance on nanotechnology, particularly in **reconstructing crime scenes**, **rebuilding atoms and molecules**, and **establishing the identity of suspects** based on the smallest traces of evidence.[8]

Subsection II: Lie Detection Technology in Criminal Evidence

The **polygraph** (lie detector) is a modern scientific tool used in criminal investigations to identify deception. It works on the premise that lying causes unique psychological and physiological responses—such as changes in heart rate, perspiration, and blood pressure—that can be measured via involuntary bodily functions.

While some countries like **Algeria, Poland, Russia, and Norway** prohibit its use, others such as **Sweden** permit it, though only in criminal matters and under specific conditions.

Legal scholars have long debated the **legitimacy of polygraph results** in criminal cases, with opinions ranging from strong opposition to cautious acceptance. Algerian jurisprudence largely rejects the use of polygraphs, citing concerns over **violations of the defendant's rights**, including the **right to remain silent** and **freedom of defense**.

Compelling a defendant to undergo polygraph testing without consent renders the process invalid. Courts in **France and the UK**, along with international treaties and conferences—such as the **European Scientific Section in Brussels, 1951**—have emphasized the **inadmissibility of coercion and the importance of protecting human rights**.

According to Interpol's Mr. Roeck, member states are warned against the use of lie detectors, especially if they involve psychological pressure or physical coercion. However, he notes that polygraphs may be used **under two conditions**:

1- The defendant's voluntary consent

2- The results are not used as direct evidence of guilt[9]

Section II: Evidentiary Value of Nano-Based Evidence

The admissibility of nanotechnology-derived evidence has sparked **significant debate** among legal scholars and across legal systems. Jurisdictions that do recognize such evidence typically do so within the framework of **judicial discretion**.

Pradesh, India, p. 7

[7] *Jadoui Sidi Mohamed Amin, "Nanotechnology and Its Role in Criminal Evidence," Eliza Journal for Legal and Political Research, Vol. 8, No. 1, Algeria, 2023, p. 172*

[8] *Omar Abdel-Majid Musbah, "The Role of Bloodstains in Crime Detection Using Nanotechnology," Arab Journal of Security Studies, Vol. 30, No. 61, Saudi Arabia, 2014, p. 35*

[9] *Jadoui Sidi Mohamed Amin, op.cit pp. 174-175*

Subsection I: Judicial Discretion in Evidence Evaluation

In criminal proceedings, the **principle of the judge's personal conviction** governs the evaluation of evidence. This principle results in two key outcomes:

1- The judge is free to accept any form of evidence, unless otherwise restricted by law

2- The judge has absolute authority to weigh the credibility and sufficiency of the evidence presented

However, such conviction must be based on **certainty and logical coherence**—the evidence must be consistent, complete, and free of contradiction. The judge must examine all elements thoroughly.

Algerian legislation affirms this principle in **Article 212(1) of the Code of Criminal Procedure**, which states:

"Crimes may be proven by any means of evidence, except in cases where the law provides otherwise. The judge may issue a ruling based on his personal conviction."

Thus, Algerian law, in line with other legal systems, subjects all evidence—including that derived from nanotechnology—to the judge's discretionary evaluation.[10]

Subsection II: Limitations of Judicial Discretion

Despite the general rule, there are several important exceptions where judicial discretion is restricted:

1- **Adultery Offenses:**

Under Algerian law, adultery can only be proven by (a) a flagrante delicto report by judicial police, (b) the accused's confession, or (c) judicial admission. Therefore, nanotechnology-based evidence is **inadmissible** in such cases.

2- **Non-Criminal Matters:**

When a criminal ruling depends on determining a **civil issue** (e.g., establishing a contractual relationship), the judge must follow **civil evidentiary rules**, not the general rules of criminal procedure.

3- **Exclusion of Certain Evidence:**

Some forms of evidence are **inadmissible** in criminal cases if they violate the defendant's right to a fair trial. For example, a letter sent by the accused to their lawyer admitting guilt **cannot** be used as evidence, as it breaches attorney-client confidentiality.

4- **Evidentiary Weight of Official Reports:**

According to **Article 218 of the Code of Criminal Procedure**, some official reports have **probative value unless falsified**, such as **customs reports** or those by **commercial inspectors**, which are regulated by special laws

Conclusion

Nanotechnology is a **double-edged sword**—it offers immense benefits to society and the world at large, especially in **solving complex issues**. At the same time, it poses serious risks and has the potential to enable crimes on a global scale.

Among its most notable contributions is in the field of **criminal evidence**, where it has revolutionized the **detection and proof of crimes**, particularly in areas that were previously difficult or impossible to investigate—such as **environmental crimes**. Thus, nanotechnology holds a pivotal place in modern criminal justice, demanding careful regulation and ethical oversight.

[10] *adoui Sidi Mohamed Amin, op.cit pp.176*

Bibliography:

1- Bouhouia, Amal, and Aicha Omrane. *The Impact of Nanotechnology Use on Consumer Health and Safety in Algerian Consumer Law*. Journal of the Research Professor for Legal and Political Studies 4, no. 2 (2019). Algeria.

2- Brar, Satinder, Manish Verma, R. D. Tyagi, and R. Y. Surampalli. "Nanoparticles." In *Contaminants of Emerging Environmental Concern*, 2009

3- Habet, Amal. *The Role of the National Authority for the Prevention and Combat of ICT-Related Crimes in Facing Cybercrimes*. International Journal of Legal and Political Research 5, no. 3 (2021). Algeria.

4- Jadoui, Sidi Mohamed Amin. *Nanotechnology and Its Role in Criminal Evidence*. Eliza Journal for Research and Studies 8, no. 1 (2023). Algeria.

5- Masbah, Omar Abdelmajid. *The Role of Bloodstains in the Detection and Proof of Crimes through Nanotechnology*. Arab Journal of Security Studies 30, no. 61 (2014). Saudi Arabia.

6- Owad, Abdul Jabbar, and Taleb Abbas. *Cybercrimes and Their Proof*. Rafidain Journal of Legal and Political Sciences 4, no. 6 (2021). Jordan.

7- Prasada, Andan, Sally Lukoseeb, and Lalit Prasada. *Emerging Forensic Applications in Nanotechnology*. International Journal of Engineering and Applied Sciences (IJEAS) 2 (February 2016). Galgotias University, Greater Noida, Uttar Pradesh, India.

8- Wasel, Mohamed Magdy. *Introduction to Nanoscience*. Cairo: Four University Publishing, 2008. Egypt.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Legal Issues of Conventional Financial Derivatives and Their Alternatives According to the Standards of the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI): An Analytical Comparative Jurisprudential StudyConcept of Electronic Consumer Protection and Means of Safeguarding It Amid Artificial Intelligence Applications

Garoui Nora

Doctor

University of Ghardaia / Faculté; Sciences Sociales et Humaines /Department of Sciences Islamiques

Algeria

E-mail: dr.nour.gar@gmail.com ; Orcid: 0009-0001-8995-3320

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keyword Legal issues, financial derivatives, Sharia standards of (AAOIFI).

Abstract

This article addresses the issue of Sharia-related problems in conventional financial derivatives and presents their alternatives according to the Sharia standards of the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI). It is one of the pressing issues in the Islamic finance industry due to the increasing need for legitimate hedging instruments that maintain a balance between economic efficiency and Sharia compliance.

The article begins by presenting the conceptual framework of conventional financial derivatives, discussing their concept and characteristics, objectives, and types. It then reviews the most prominent Sharia problems surrounding these instruments, before moving on to present their Sharia-compliant alternatives, concluding with a comparison between them and these alternatives in terms of contractual structure, economic efficiency, and applicability.

The study concluded that these instruments, in their conventional form, are not permissible under Sharia, and according to AAOIFI standards, they can only be used within alternative formulations that adhere to Sharia contracts such as Salam, Istisna, Murabaha, and others. It also pointed to important recommendations, most notably the necessity of developing Sharia-compliant markets that support these instruments, enhancing human capacities, and strengthening institutional infrastructure.

Citation. Garoui N. (2025). The Legal Issues of Conventional Financial Derivatives and Their Alternatives According to the Standards of the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI): An Analytical Comparative Jurisprudential Study. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 529–542. https://doi.org/10.56352/sei/8.11.41

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.01.2025	Accepted: 17.05.2025	Published: 02.09.2025 (available online)

INTRODUCTION:

The subject of financial derivatives constitutes one of the central issues in modern economics and finance due to their active role in risk management and market volatility. They are a core component of contemporary financial transactions. However, in their conventional form, these derivatives raise a fundamental Sharia problem, making it necessary to reconsider them from the perspective of Islamic law.

The importance of this research lies in addressing one of the jurisprudential challenges in Islamic finance, as Islamic financial institutions seek to find hedging instruments that comply with Sharia. Hence, the significance of providing Sharia-compliant alternatives to conventional derivatives arises, enabling these institutions to achieve their financial objectives within a legitimate framework. This is precisely what the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) has sought to achieve by issuing Sharia standards regulating such transactions.

Accordingly, this study falls within the scope of analytical comparative Sharia studies, aiming to answer the central question: What are the Sharia problems in conventional financial derivatives, and what are the available alternatives according to AAOIFI standards? It answers this through the following subsidiary questions:

1. What are conventional financial derivatives, what are their types, and what are their objectives and purposes?
2. What Sharia violations are involved in these instruments, and what is the position of AAOIFI as a Sharia supervisory body?
3. What Islamic financial instruments can replace these derivatives?
4. To what extent are these alternatives effective in financial risk management?

To address these questions, the study employs the descriptive method to clarify the nature of conventional financial derivatives in terms of concept, types, characteristics, and objectives; the analytical method to examine conventional derivatives and identify the Sharia objections they entail; the inductive method to extract rulings from the standards issued by AAOIFI and to trace their Sharia-compliant alternatives in line with the objectives of Islamic law; and finally, the comparative method to contrast the effectiveness of conventional derivatives and Sharia-based alternatives in terms of contractual structure, economic efficiency, and other aspects.

FIRST: THE CONCEPTUAL FRAMEWORK OF CONVENTIONAL FINANCIAL DERIVATIVES

Understanding the conceptual framework of conventional financial derivatives is a scientific necessity for comprehending the nature of the jurisprudential and economic debate regarding their legitimacy, the possibility of adapting them in accordance with Sharia, or innovating suitable alternatives. Given their importance in financial risk management, hedging, and dealing with market fluctuations, these instruments have become the subject of wide-ranging jurisprudential discussions.

This section addresses the fundamental concepts of conventional derivatives, their objectives, characteristics, and types, in preparation for examining them from the Sharia perspective in the subsequent sections.

1. The Concept of Conventional Financial Derivatives

Financial derivatives are financial instruments derived from other assets, called the underlying asset (such as stocks, bonds, commodities, foreign currencies, indices, and others). They can be bought, sold, and traded in a manner similar to stocks and other financial instruments (Kandouz, 2022, p. 5).

They have also been defined as financial instruments linked to a specific instrument, index, or commodity, through which financial risks can be bought or sold in financial markets. The value of the derivative instrument depends on the price of the underlying asset or indices under contract. Unlike debt instruments, there is no upfront payment to be reimbursed and no return due on investment. Derivatives are used for several purposes, including risk management, hedging against risks, arbitrage between markets, and speculation (Radwan, 2005, p. 61).

Thus, derivatives are not genuine sales contracts requiring the transfer of ownership of the underlying asset or cash flows. Rather, they are contractual arrangements aimed at generating profits from changes in asset prices their essence being a wager between the two parties on mere price movements.

2. Objectives of Derivatives in Financial Markets

Deriving from the aforementioned concepts of financial derivatives, the main objectives of trading these instruments can be summarized as follows (Kandouz, 2022, pp. 14-15; Hamad, 2001, p. 34; Hindi, 2003, pp. 12-24; Shafia & Dhehiba , n.d, pp. 383-384; Radwan, 2005, p. 238):

- **Hedging:** Used to hedge against the risks of expected changes in asset prices by reducing uncertainty and minimizing risk exposure as much as possible, even if it requires sacrificing part of the expected returns.
- **Price Forecasting:** Serving as a tool adopted by companies in their financial planning, derivatives provide market participants with information on asset prices in the present market for a specified delivery date.
- **Speculation:** Offering opportunities to generate profits from price fluctuations without the need to own the underlying asset. Derivatives are also used to obtain additional financial leverage.
- **Risk Management:** Facilitating the transfer of risks from one party to another more capable of bearing them, without the need for prior ownership of the underlying asset.

3. Characteristics of Conventional Derivatives (Hindi, 2003, pp. 12-24; Shafia & Dhehiba , n.d, pp. 383-384):

- **Dependence on an Underlying Asset:** Their value is not determined independently but depends on the underlying asset to which they are linked.
- **Leverage:** They enable investors to control large amounts and achieve significant gains with limited capital.
- **Tradability:** They can be quickly bought and sold in secondary markets due to their flexibility and high liquidity.
- **Non-symmetry:** They do not require the exchanged values to be equal.

- **Cash Settlement:** In most cases, settlement occurs in cash rather than through actual exchange of the commodity.

SECOND: TYPES OF CONVENTIONAL FINANCIAL DERIVATIVES

1. Forward Contracts (Forwards)

a. Definition:

A forward contract is "an agreement to buy or sell an asset at a specified future time for a specified price" (Hamad, 2001, p. 12).

It can also be defined as "an agreement between two parties to buy a certain asset (a real asset, currency, securities, etc.) at a future date for a price agreed upon at the time of contracting" (Kandouz, 2022, pp. 11-12).

In forward contracts, the contracting parties usually have prior dealings and knowledge of each other. Prices, quantities, and maturity dates are clearly defined through negotiation and direct communication. The contract is executed according to its conditions, and the actual delivery and receipt of the subject matter take place. These contracts are usually concluded over-the-counter (OTC), outside formal exchanges.

b. Characteristics (Hamad, 2001, pp. 12-18; Kandouz, 2022, p. 12):

- Simple derivatives that are usually not traded on exchanges.
- Their main purpose is to hedge against fluctuations in commodity and currency prices.
- The holder is obligated to buy or sell the underlying asset at a specified price and date.
- Entering into the contract has no upfront cost.
- They involve very high credit risk due to the absence of a guarantor, relying solely on the financial solvency of the two parties.
- Difficult to resell since they are privately negotiated for specific purposes between two parties, which results in high liquidity risk.

2. Futures Contracts (Futures)

a. Definition:

A futures contract is "an agreement between two parties to buy or sell a specific asset in the future at a specified price" (Hamad, 2001, p. 16).

Another definition is: "an agreement between two parties whereby one party commits to deliver a specified asset at a fixed price, with the time and place of delivery determined. The contracts are executed and settled by a third party—the clearinghouse" (Kandouz, 2022, p. 12).

Futures contracts involve both deferred price and deferred subject matter. They are standardized contracts organized by global exchanges, requiring a small margin paid to clearinghouses. Futures cover commodities, stocks, bonds, options, interest rates, and indices.

They are similar to forwards in that both are executed in the future. However, they differ in that futures occur between parties with no prior knowledge or dealings; they are traded on formal exchanges; they

are standardized with fixed, non-negotiable terms; and settlement often occurs by paying the difference rather than delivering the underlying asset.

b. Characteristics (Hamad, 2001, pp. 16-18; Kandouz, 2022, p. 12):

- Standardized and regulated contracts traded on exchanges.
- The holder is obligated to buy or sell the underlying asset at a specified price and date.
- Used for both hedging and speculation.
- No cost for entering into the contract.
- Highly liquid instruments.

3. Options Contracts (Options)

a. Definition:

An option is "the right to buy a particular stock at a specified price during a specific period of time. The value of the option derives from the underlying security, which the option grants the right to buy or sell. Hence, options are considered derivative securities. They take various forms, including call options, put options, and warrants" (Hamad, 2001, p. 40).

Another definition: "A contract under which one party (the seller) grants the other party (the buyer) the right (but not the obligation) to purchase a specific asset (which may be a real commodity, currency, security, etc.) at an agreed-upon price, called the exercise price, within a specified period (the contract duration). In return, the buyer pays the seller a premium (option price) at the time of contract" (Kandouz, 2022, p. 10).

Types of Options (by different considerations):

- **By the issuing entity:**
  1. Options granted by companies to senior employees as incentives, giving them merely the right (not the actual ownership) to buy or sell shares.
  2. Options issued by companies to attract new investors, often at below-market prices.
  3. Options granted by central authorities (stock exchange authorities or brokers) on shares.
  4. Options granted by companies to shareholders.
- **By the underlying instrument:** 1) Foreign currencies, 2) Indices, 3) Combined index-currency-stock options.
- **By contract nature:** Covered or uncovered options.
- **By type of option:** 1) Call option, 2) Put option, 3) Combined call and put option.

b. Characteristics (Hamad, 2001, pp. 16–18, 105; Kandouz, 2022, pp. 10–11):

- Traded in over-the-counter (OTC) markets.
- Used for hedging or speculation.
- Grant the right (but not the obligation) to buy or sell the underlying asset at a specified price and date. They are rights, not ownership or utility.

- Entering an option requires a premium.
- Require smaller amounts of capital compared to direct trading in stocks.
- Allow investors to limit losses since the maximum loss is known in advance.
- Provide greater financial leverage.
- Offer a wide range of opportunities for investors.
- Compared to other financial instruments, options are among the most widely traded.

4. Swap Contracts (Swaps)

a. Definition:

A swap is "an agreement between two parties whereby each agrees to pay a series of cash flows to the other over a specified future period. The agreement includes the payment dates and the method of calculation of these cash flows" (Al-Rubaie, 2011, p. 363).

Another definition: "A derivative contract in which two parties exchange cash flows from two different financial instruments (e.g., two loans in different currencies with different interest rates)" (Kandouz, 2022, p. 13).

They are also defined as: "the exchange of payments between two parties for the purpose of transferring risk from one party to another, either for hedging or speculative purposes" (Radwan, 2005, p. 238).

The most common types are currency swaps and interest rate swaps.

b. Characteristics (Kandouz, 2022, p. 257):

- Bilateral agreements traded in OTC markets.
- Involve the exchange of cash flows such as interest rates or currencies.
- Used for hedging against price or interest rate fluctuations.
- Highly flexible: for example, a company issuing floating-rate bonds can convert them into fixed-rate bonds if it anticipates rate volatility.
- Customized to meet the needs of contracting parties.
- Low-cost instruments.

THIRD: SHARIA ISSUES OF CONVENTIONAL DERIVATIVES ACCORDING TO THE STANDARDS OF THE ACCOUNTING AND AUDITING ORGANIZATION FOR ISLAMIC FINANCIAL INSTITUTIONS (AAOIFI)

Despite the active role conventional financial derivatives play in risk management and in reducing losses in financial markets, they carry profound Sharia problems. Contemporary Sharia boards, foremost among them the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), have confirmed that these instruments, in their current forms, involve several Sharia prohibitions, including the following:

1. Sharia Issues of Forward Contracts

AAOIFI, in Sharia Standard No. 20, which addresses the sale of commodities in organized markets, discussed derivatives and declared it impermissible to deal in them, whether by creating or trading them. The reasons given for the prohibition of forward contracts include ((AAOIFI), 2015, pp. 554–559):

- Both counter-values are deferred, resulting in two liabilities without settlement.
- The condition contradicts the essence of the contract.
- They involve the sale of what one does not own.

2. Sharia Issues of Futures Contracts

AAOIFI addressed the Sharia problems of futures in Sharia Standard No. 20 (as above), Standard No. 21 on securities (stocks and bonds), and Standard No. 45 on capital protection and investments. All of these explicitly prohibit futures contracts due to the following Sharia violations ((AAOIFI), 2015, pp. 559, 562, 572, 582, 583, 1128):

- They are binding promises that transform into a sales contract in the future without offer (ijab) and acceptance (qabul).
- They require deferred delivery of a specified asset, such as stocks.
- The seller often sells what he does not own.
- They are settled in cash between the contracting parties, which constitutes gambling (qimar) or a form of it, whether or not stipulated in the contract.
- Actual delivery of the underlying asset is not intended by the parties.
- They create obligations and debts without benefit, serving only as speculation and exposing one party inevitably to loss.

3. Sharia Issues of Options Contracts

AAOIFI, in Standards Nos. 20, 21, and 45, declared options contracts impermissible, as they contain the following Sharia prohibitions ((AAOIFI), 2015, pp. 559, 572, 583):

- The subject matter of the contract (the option right) is not permissible to be exchanged for consideration in Sharia, since it does not initially exist for the seller but is created merely by contract.
- The subject matter does not pertain to property but to an intangible right (the right to buy or sell).
- They involve gharar (excessive uncertainty).
- They often end with cash settlement between the parties, which is gambling (maysir).
- They involve selling what one does not own, since the option writer (call option seller) does not possess the shares or commodities he undertakes to sell.

4. Sharia Issues of Swap Contracts

Swap contracts also involve several Sharia violations identified by AAOIFI in Standards Nos. 20, 21, and 45, including ((AAOIFI), 2015, pp. 559, 572, 583):

- Involvement of interest (riba), or forms of 'inah, and deferral of both counter-values.

- Both payments are deferred, making it a debt-for-debt transaction (bay al-kali bi al-kali).
- They involve gharar due to ignorance of the amount of money at the time of contracting.
- They involve gambling (qimar), whereby one-party gains at the expense of the other without actual exchange, as the contract merely settles differences in return rates on stocks.

5. Sharia Issues Related to Trading in Derivatives

Trading in these instruments is accompanied by additional Sharia concerns, including:

a. Contradiction with the essence of the contract:

Most conditional contracts are fictitious, involving no actual transfer of ownership, whereas Sharia contracts are intended to achieve transfer of ownership.

b. Contradiction with the objective of Sharia in establishing justice:

The philosophy underlying these derivatives inevitably results in one party's profit being realized through the other's loss. This contradicts the Sharia objective of fairness. Examples include speculators monopolizing certain securities to manipulate markets, exploiting participants' needs through unfair pricing not based on supply and demand, or through unilateral control of decisions within issuing firms.

c. Unethical practices leading to fraud (ghubn):

This occurs when traders deceive others in the market by creating artificial activity in stagnant stocks through agreements to sell and repurchase the same shares at the same or slightly different prices on the same day to create the illusion of genuine price movements. This constitutes prohibited deception.

Each of these Sharia prohibitions whether riba in all its forms, gharar, maysir and gambling, the sale of what one does not own, contradiction with the essence of contracts (ownership), violation of Sharia objectives of contracts (justice), or their association with fraud (ghubn) is, on its own, sufficient to prohibit these instruments. How much more when they are combined? These issues have driven the search for Sharia-compliant alternatives that achieve the same objectives without contravening Sharia rules, which will be addressed in the following section.

FOURTH: SHARIA STANDARDS GOVERNING ALTERNATIVE HEDGING INSTRUMENTS TO CONVENTIONAL DERIVATIVES AND THEIR REGULATIONS ACCORDING TO AAOIFI

Given the prohibition of conventional financial derivatives in Islamic law due to their inclusion of Sharia violations such as riba, gharar, maysir (gambling), the sale of what one does not own, and others, there arose a need to devise parallel financial alternatives that achieve the objectives of hedging and risk management without violating Sharia rules. From this standpoint, AAOIFI exerted precise jurisprudential effort to propose such alternatives, embodied in the formulation of clear Sharia standards that reinforce the principles of sound Islamic finance. Among these standards are the following:

1. Sharia Standard No. 10 (Salam):

Its content is "Salam," whereby an institution sells goods through a Salam contract, receives payment in advance, then procures the goods required by purchasing them from the market upon maturity. It is permissible to obtain a promise to sell in order to reduce the risk between the selling price and the purchase price ((AAOIFI), 2015, p. 862).

The standard states that Salam is a hedging tool against commodity price fluctuations. Its purpose is to clarify the Sharia rules and requirements that Islamic financial institutions must observe in such transactions, covering the contract, its subject matter, subsequent actions upon delivery or default, as well as the issuance of Salam Sukuk ((AAOIFI), 2015, pp. 272–281).

2. Sharia Standard No. 11 (Istisna):

Its content is Istisna: an institution concludes a manufacturing sale contract (bay al-Istisna) with a condition of upfront payment although not obligatory—and simultaneously concludes a parallel Istisna contract with deferred or installment payments ((AAOIFI), 2015, p. 862).

The standard defines Istisna and parallel Istisna as hedging instruments against price fluctuations in manufacturing. It aims to clarify the rules and Sharia requirements governing such contracts, covering their conclusion, subject matter, performance, supervision, warranties, amendments, additional claims, and delivery of the manufactured goods ((AAOIFI), 2015, pp. 293–307).

3. Sharia Standard No. 8 (Murabaha):

Its content is Murabaha: whereby the institution sells to its client (the orderer to purchase) a commodity at a markup over cost or purchase price. This markup (Murabaha profit) is pre-determined in the promise, and the transaction is often deferred payment, distinguishing "banking Murabaha" from ordinary Murabaha ((AAOIFI), 2015, p. 182).

The standard specifies Murabaha as a hedging instrument, clarifying the Sharia principles and requirements, from the initial promise through the client's ownership of the asset, as well as procedures for Murabaha guarantees and debt management ((AAOIFI), 2015, pp. 199–217).

4. Sharia Standard No. 9 (Ijarah Muntahia bi-Tamlik – Lease Ending with Ownership):

This is a lease contract coupled with a promise to transfer ownership of the leased asset to the lessee at the end of the lease term or during it ((AAOIFI), 2015, p. 208).

The standard defines it as a hedging instrument and clarifies its Sharia requirements, from the initial leasing promise (if any), through operational leasing, and finally to ownership transfer in Ijarah Muntahia bi-Tamlik. It details the conditions, procedures, and obligations for institutions whether acting as lessors or lessees ((AAOIFI), 2015, pp. 184–208).

5. Sharia Standard No. 45 (Capital and Investment Protection):

This standard explains the main Sharia-compliant means of protecting capital and investments within Islamic financial institutions. It addresses what is permissible and impermissible, with detailed rules. It emphasizes legitimate methods of mitigating risks, such as diversifying investments across real assets (e.g., real estate, commodities) and financial assets (e.g., stocks, Sukuk), or combining assets denominated in different currencies.

It also allows combinations such as Murabaha and Musharaka, or Murabaha and bay' al-'urbun (earnest money sale), dividing capital into two parts: one placed in secure Murabaha contracts and the other in riskier Musharaka or 'urbun contracts, thereby preserving capital while allowing profit opportunities. Safeguards such as collateral, guarantees, and options (khiyar al-naqd) are also included ((AAOIFI), 2015, pp. 1119–1127).

6. Sharia Standard No. 49 (Promises and Promissory Agreements):

This standard clarifies the nature of promises (wa'd) and promissory agreements (muw'ada), their binding force, Sharia rulings, and contemporary applications in Islamic financial institutions. It differentiates permissible from impermissible uses of promises and promissory agreements ((AAOIFI), 2015, pp. 1184–1193).

7. Sharia Standard No. 1 (Trading in Currencies):

This standard regulates currency trading, clarifying its Sharia conditions and what is permissible or not. It addresses actual and constructive possession, the use of modern communication means in foreign exchange transactions, the rules of deferred exchange, and practical cases in Islamic financial institutions ((AAOIFI), 2015, pp. 51–60).

8. General Regulations for the Use of Hedging Instruments According to AAOIFI:

AAOIFI also permits the use of other legitimate tools and procedures, with investor consent, to protect capital from risks of all types, whether arising from asset destruction, depreciation, inflation, exchange rate volatility, or otherwise ((AAOIFI), 2015, p. 876). The application of these instruments is conditioned by several Sharia requirements, including ((AAOIFI), 2015, pp. 565–566):

- **Legitimate hedging intention:** The purpose must be protective, not speculative.
- **Existence of a real asset (or a liability described in the contract):** The instrument must be tied to a tangible asset or legitimate commercial transaction.
- **Non-tradability of promises or contracts for speculative purposes.**
- **Compliance with Islamic contract conditions:** Regarding ownership, possession, price, and subject matter. Islam differentiates between contracts on gold, silver, food, and currency requiring immediate exchange—and contracts on other goods, where some flexibility exists regarding deferment.

From the above, it is clear that AAOIFI has worked to formulate comprehensive Sharia-compliant alternatives to replace conventional derivatives. These alternatives achieve hedging and risk management objectives within strict jurisprudential rules, including Salam, binding promises, Istisna, Murabaha, and others. These alternatives do not only fulfill financial purposes but also contribute to financial stability and Sharia compliance. The challenge remains to further classify other possible alternatives such as Istijrar contracts, supply contracts, and Islamic options (32 types), and to develop and streamline their application in ways that align with the needs of modern markets.

FIFTH: A COMPARATIVE STUDY BETWEEN CONVENTIONAL DERIVATIVES AND ISLAMIC ALTERNATIVES

Despite the wide spread of conventional financial derivatives in global markets as instruments for hedging and speculation, their use in Islamic finance remains rejected due to their contradiction with the principles and rules of Sharia. Within a comparative framework, Islamic financial institutions have adopted Sharia-compliant alternative instruments structured in accordance with AAOIFI standards. To provide a complete picture and assess the efficiency of these alternatives, it is necessary to conduct a systematic comparison between them and conventional derivatives, drawing upon the preceding discussions. The focus of this comparison is on the key differences in terms of the contractual Sharia structure, economic efficiency, and practical applicability.

1. Comparison in Terms of the Sharia Structure of Contracts (Bouchra & Omar , 2022, pp. 187–188):

Standard	Conventional Derivatives	Islamic Alternatives
Legal Structure	Abstract financial contracts not involving actual ownership of the underlying asset.	Based on recognized Sharia contracts (Salam, Istisna', Murabaha, and others).
Subject Matter of the Contract	Often nonexistent or not owned at the time of contracting.	Requires the existence and ownership of the subject matter or the ability to deliver it.
Execution Mechanism	Based on the exchange of price differentials or promises without an underlying asset.	Actual execution involving the delivery of goods or currencies in accordance with the contract.
Jurisprudential Aspects	Involve *gharar* (excessive uncertainty), *riba* (usury), *maysir* (gambling), *qimar*, and the sale of what one does not own.	Compliant with the contractual regulations in Islamic jurisprudence.

Note: Most Western authors acknowledge that derivatives are essentially a form of betting and gambling; they have caused numerous financial crises for many companies. Among them: *Procter and Gamble*, which lost **1.2 million USD** in 1994 due to speculation on interest rate movements; *Air Products and Chemicals*, which lost **60 million USD** as a result of dealing in derivatives; *Paine Webber*, which incurred losses of **268 million USD** within just four months of 1994 due to supporting one of its commercial funds in derivatives trading; and many others. In addition, there was the well-known crisis of *Berlin Bank* and the Great Recession of 2008 (El-Baz, 2003, pp. 38–39).

Islamic alternatives surpass conventional derivatives in terms of ethical safety and Sharia compliance; however, they require further technical and institutional development to enhance their efficiency.

2. Comparison in Terms of Economic Efficiency (Bouchra & Omar , 2022, p. 198; Supervision, 1996, p. 158):

Standard	Conventional Derivatives	Islamic Alternatives
Prevalence	Widely spread globally	Still limited in scope and sometimes conflict with domestic laws of certain countries
Liquidity	High, with immediate tradability	Lower, due to their linkage with actual assets
Speed of Execution	Rapid electronic execution	Require time to review contract compliance with Sharia
Hedging Efficiency	Ineffective	Effective but require precise structuring and strictness to ensure efficiency
Operational and Regulatory Risks	Pose significant operational and regulatory risks to banks	Do not pose significant risks

3. Comparison in Terms of Practical Use and Application (Bouchra & Omar , 2022, p. 186; Toumi, 2024, p. 493; El-Jouzi & Wahdou , 2016, pp. 81–83):

Standard	Conventional Derivatives	Islamic Alternatives
Applicability in Conventional Markets	High	Require Islamic institutional infrastructure
Ease of Promotion to Investors	Easy, globally understood	Require education and explanation of the product
Legislative and Regulatory Support	Recognized in capitalist systems	Require support from Sharia and regulatory authorities
Real Examples	Chicago Board of Trade, NYMEX, Euronext, Osaka Exchange, Singapore Exchange (SGX)	Central Bank of Bahrain, Al Baraka Islamic Bank (Bahrain), Al Baraka Bank Algeria, Bank Nizwa (Oman), Al Baraka Banking Group, Al Salam Bank Algeria, ...

It is evident from this comparison that conventional financial derivatives enjoy operational efficiency and wide global prevalence; however, they contravene the recognized Sharia regulations within the Islamic system. In contrast, Islamic alternatives provide a legitimate solution that balances the achievement of economic objectives with adherence to jurisprudential rulings, even though they still face practical and structural challenges. With continued support from Sharia boards and institutional development, the applicability of these alternatives is expected to expand globally.

CONCLUSION:

The study addressed the jurisprudential problems of conventional financial derivatives and their Sharia-compliant alternatives through an analytical comparative jurisprudential study between conventional derivatives as practiced in global markets and the Sharia-based alternatives approved by Sharia boards, particularly AAOIFI.

The research began by identifying the basic concepts of conventional financial derivatives, their characteristics, objectives, and types. It then moved on to discuss the Sharia problems inherent in these instruments, such as gharar (excessive uncertainty), riba (usury), maysir (gambling), and the sale of what one does not own. The position of AAOIFI regarding these instruments was reviewed, highlighting the main standards that addressed hedging and risk management, such as Salam, Istisna, Murabaha, Mudaraba, among others. Finally, a comparative study was presented between the two systems in terms of Sharia compliance, economic efficiency, and practical application.

The study arrived at the following findings:

1. Conventional derivatives contain fundamental Sharia violations, most notably excessive gharar, riba, maysir, and the sale of what is not owned, which renders them impermissible in Islamic jurisprudence in their current form.
2. AAOIFI, in its standards, confirmed the prohibition of using conventional derivatives for hedging and established legitimate and effective alternatives.

3. Sharia alternatives rely on contracts recognized in Islamic jurisprudence, such as Salam, Istisna, and Murabaha, among others, with the condition of genuine hedging intent rather than speculation.
4. Islamic alternatives excel in terms of Sharia compliance and the protection of wealth from prohibitions, but they still face practical challenges such as weak liquidity and complex institutional structures.
5. There is an urgent need for more innovation in Sharia-compliant structures to make hedging instruments more effective and suitable for Islamic financial institutions.

Main Recommendations:

1. The necessity of enhancing Sharia and technical awareness among professionals in the Islamic finance sector regarding legitimate hedging instruments and training them on their implementation.
2. Calling on regulatory and supervisory bodies to support Islamic financial markets that organize the trading of Sharia-compliant derivatives within a strict Sharia framework.
3. Guiding Islamic financial institutions toward using legitimate alternatives to protect themselves from risks and to achieve competitiveness within the global financial system.

REFERENCES:

1. Abdelkarim Kandouz .(2022) .*Al-Mushtaqat Al-Maliyya (Financial Derivatives)* .Abu Dhabi: Arab Monetary Fund.
2. Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) .(2015) . *Shari'ah Standards* . (Vol. 9)Bahrain: Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI).
3. Badra Ben Toumi .(2024) .Dirasa Muqarana li Tasnif Hisabat Al-Istithmar Al-Qaim' ala Al-Mudaraba fi Al-Qawa'im Al-Maliyya bayna Ma'ayir AAOIFI wa IAS/IFRS (A Comparative Study of the Classification of Investment Accounts Based on Mudaraba in Financial Statements between AAOIFI St .*Journal of Finance, Investment and Sustainable Development.2* ،
4. Basel Committee on Banking Supervision .(1996) .*Report on Derivatives* .Basel, Switzerland: Bank for International Settlements (BIS).
5. Ben Daddouch Bouchra and Jafari Omar .(2022) . Qudrat Ma'ayir AAOIFI' ala Mujabahat Al-Ma'ayir Al-Muhasabiya Al-Duwaliyya (The Ability of AAOIFI Standards to Face International Accounting Standards) .*Journal of Economic and Administrative Research.1* ،
6. Hakem Al-Rubaie .(2011) .*Al-Mushtaqat Al-Maliyya (Financial Derivatives)* (1 st ed) .(Amman, Jordan: Dar Al-Yazouri.
7. Heba Mahmoud El-Tantawi El-Baz .(2003) .Al-Tatawwurat Al'-Alamiyya wa Atharuha' ala Al-'Amal Al-Masrifi wa Istratijiyyat' Amal Al-Bunuk fi Muwajahatihā) Global Developments and Their Impact on Banking Operations and Banks 'Strategies in Facing Them .(*Master's Thesis in Economics, Faculty of Commerce, Ain Shams University.* ,

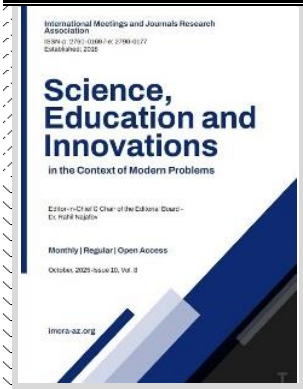
8. Jamila El-Jouzi and Ali Wahdou .(2016) . Dirasa Muqarana li-Idarat Al-Makhater fi Al-Jazair bayna Al-Masaref Al-Islamiyya wa Masaref Taqalidiyya Khassa (A Comparative Study of Risk Management in Algeria between Islamic and Conventional Banks) .*Algerian Journal of Globalization and Economic Policies.,*

9. Ketaf Shafia and Latrech Dhehiba) . n.d ‘ .(*Uqud Al-Mushtaqat Al-Maliyya bayna Al-Ahammiyya Al-Iqtisadiyya wa Al-Ru’ya Al-Shar‘iyya (Financial Derivative Contracts between Economic Importance and Sharia Perspective)* .Djelfa: Afaq Journal University of Djelfa.

10. Mounir Ibrahim Hindi .(2003) .*Al-Fikr Al-Hadith fi Idarat Al-Makhater, Al-Handasa Al-Maliyya bi-Istikhdam Al-Tawriq* .(Vol. 2) Alexandria, Egypt: Manshat Al-Ma‘arif.

11. Samir Abdel Hamid Radwan .(2005) .*Al-Mushtaqat Al-Maliyya wa Dawruha fi Idarat Al-Makhater, wa Dawr Al-Handasa Al-Maliyya fi Sina‘at Adawatihā) Financial Derivatives and Their Role in Risk Management, and the Role of Financial Engineering in Creating Their Instruments .(* Cairo: Dar Al-Nashr lil-Jami‘at.

12. Tarek Abdel Aal Hamad .(2001) .*Al-Mushtaqat Al-Maliyya (Al-Mafahim – Idarat Al-Makhater, Al-Muhasaba .(*Al-Dar Al-Jami‘iyya. ,



Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Interactive Criticism of Digital Literature : A Taxonomic Approach to Interactive Texts

Berriche Hana Oum Elkeir
Mohamed Khider University of Biskra
Algeria

Issue web link	https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html
Keyword	Interactive Criticism, Digital Literature, Interactive Texts, Literary Genres, Multimedia, Interactive Reader.

Abstract

The literary and critical landscape has undergone a profound transformation driven by the technological revolution, which has propelled creative texts toward digital and interactive forms, Interactive criticism emerges as a direct response to this shift, aiming to analyze digital texts that rely on technology and multimedia platforms. This study examines the theoretical framework of interactive criticism by defining it as a composite concept that integrates digital interactivity with textual analysis, while highlighting its conceptual ambiguities and the terminological uncertainties surrounding it

The present study seeks to provide an in-depth examination of interactive criticism through a comprehensive approach that begins with defining the concept and tracing its epistemological roots, followed by classifying prominent forms of digital literature, such as interactive fiction and digital poetry, ultimately proposing a new taxonomy for interactive literary genres based on traditional literary categories, This approach reflects the necessity of rethinking conventional critical classifications in light of the distinctive nature of digital texts

The central challenge lies in developing critical tools capable of accommodating the dynamics of interactive texts, which surpass the linear framework of print-based literature, and in ensuring that literary criticism keeps pace with this transformation while maintaining analytical depth without descending into purely technical readings. Furthermore, this study addresses the question of the extent to which interactive criticism can offer new methodological insights aligned with the characteristics of digital literature, thereby expanding the horizons for analyzing digital texts within the Arab context.

Citation. Berriche H. O.E. (2025). Interactive Criticism of Digital Literature : A Taxonomic Approach to Interactive Texts. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 543–551. https://doi.org/10.56352/sei/8.11.42

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.02.2025	Accepted: 01.07.2025	Published: 05.09.2025 (available online)

Introduction:

Technological advancements have given rise to new forms of literary creativity, necessitating a reassessment of traditional critical tools to keep pace with digital transformations. In this context the concept of interactive criticism has emerged as a contemporary methodology focused on studying digital texts that rely on the interaction between the text and its audience The reader is no longer a passive recipient but an active participant in the construction of meaning.

The digital environment has fostered diverse forms of digital literature such as digital poetry and interactive narratives, which utilize multimedia platforms and enable the reader to engage dynamically with the text Classifying the forms of interactive literature according to traditional literary genres, alongside technological capabilities, requires a reevaluation of the boundaries and categorization of literary genres within the digital milieu.

This study aims to shed light on these aspects to achieve a deeper understanding of how digital literature reshapes the relationship between text and reader and to highlight the role of interactive criticism in analyzing this emerging phenomenon.

1. The Concept of Digital Criticism :

Digital criticism is a contemporary methodology dedicated to the study and analysis of literary texts created and structured through multiple technological media ,It arises from an awareness of the deep interrelation between literature and digital technologies, extending beyond the mere analysis of textual content to encompass the interactive relationships between textual elements and multimedia components such as images sound, motion and hypertextual links.

As an integrative approach, digital criticism is grounded in a methodological awareness that bridges literary knowledge and critical theory on the one hand, and technical and digital expertise on the other. It treats the digital text as an entity inseparable from the technological tools that produce it. Moreover, it is concerned with examining the ways in which readers interact with the text—through navigation, hyperlink transitions, and the exploration of its multidimensional layers.

This form of criticism emphasizes the creative dimensions introduced by digitality,including interactivity, polyvocality, and semantic interconnectivity, which render the reading experience flexible and continuously evolving Additionally, digital criticism demands a set of multifaceted skills: the ability to interpret literary meaning alongside the competence to analyze the technological architecture of the text, Such a dual capacity requires the critic to possess comprehensive familiarity with both contemporary literary theories and the software used in producing digital texts.

In this respect digital criticism represents a revolution in traditional critical paradigms, as it redefines the relationship between reader and text while affirming the decisive role of technology in reshaping the literary experience in unprecedented ways.1

The multiplicity of terms associated with digital texts reflects the technological developments that have fundamentally transformed the nature of texts, as well as their modes of production and consumption The term digital text represents the broadest concept, referring to any text produced, stored, or processed by a computer, regardless of its form or content Such texts are based on the binary system (1/0), which constitutes the foundation of digital data processing.

By contrast, the term electronic text emphasizes the medium through which the text is accessed, specifically referring to texts displayed via digital devices. This term is more specific than digital text, as it highlights the relationship between content and the electronic medium, distinguishing it from traditional print-based texts.

The interactive text represents the most advanced stage of digital textuality. Unlike static digital or electronic texts, it does not merely present information but allows readers to interact with the content through hyperlinks, images,

sounds, and videos. This form relies on the reader's active engagement in constructing meaning through direct interaction, thereby tailoring the reading experience to user preferences and making it dynamic and evolving.

Such terminological diversity reflects the richness of textual forms made possible by digital technologies It also underscores the increasingly central role of the reader within the communicative process who is no longer a passive consumer of information but an active participant in the production of meaning.2

Table Types of Digitaal Texts andd thier Characteristics :

Term	Definition	Medium	Reader's Role
Digital Text	Text produced via commputer,binary system (0/1).	computer	Passive reader's
Electronic Text	Text displayed through electronic devices;gains its quality fromm the medium.	Computer,smart, devices	Mostly Passive
Interactive Text	Text allowing interaction via multimedia (sound,image,video, hyperliinks).	Computer, internet, smart devices	Active,interactive reader

It can be observed from the table that there is a gradual development in the nature of digital texts, particularly in terms of interaction and the type of medium used. The digital text represents the most basic and simple form, as its primary role is to convey information through electronic devices without offering opportunities for interaction, In contrast, the electronic text relies on an electronic medium, making it more flexible in distribution and accessibility compared to printed texts.

Meanwhile, the interactive text is considered more advanced because it allows the reader to play an active role in the reading process through engagement with the content via multimedia channels ,This transition reflects the shift of the reader from being a mere consumer of information to a participant in meaning-making, thereby enhancing the reading experience and making it more engaging and interactive.

The table also highlights the importance of the digital medium in reshaping the relationship between the text and the reader The content has become richer and more integrated through the inclusion of audio images and video, which contributes to creating an enjoyable and immersive reading environment.

2.Digital culture represents a state of awareness :

that has emerged in the modern era The world has witnessed tremendous technological advancements, leading to the rise of what is known as "digital culture," which has become an integral part of our daily lives ,This culture is not limited to the use of modern devices and technologies; it also encompasses a set of behaviors, habits, and knowledge that shape the awareness of individuals and societies in interacting with the digital world

Digital culture is defined as a set of behavioral patterns, habits, norms, and knowledge applied when using advanced devices in the virtual environment, along with the skills and capacities required to participate effectively in this digital world This definition highlights the importance of conscious engagement with modern technologies, requiring a deep understanding of how these tools function and their impact on our lives With the widespread

diffusion of technology, it has become essential to develop digital awareness among individuals, particularly in developing societies. In the context of a digital divide among different social groups, challenges arise regarding social sustainability and the ability to keep pace with technological advancements Therefore, fostering digital culture is considered a means to ensure social sustainability and bridge the digital gap.

Educational and cultural institutions play a pivotal role in promoting digital culture. Public libraries, for example, serve as ideal environments for teaching and training individuals in digital skills by providing robust informational and cultural resources that support learning and interaction with modern technologies.

Thus, digital culture represents a form of awareness that requires collaborative efforts across various sectors to enhance and disseminate it Through education and awareness initiatives, individuals can acquire the necessary skills and knowledge to engage effectively with the digital world, contributing to the development of more informed and sustainable communities in the digital era.3

3.Interactive Literature: A Digital Revolution in the World of Narratives :

In the digital era literature is no longer confined to the pages of a book or restricted to a linear narrative style It has transformed into an interactive experience that grants the reader an active role in constructing and shaping the text This transformation has led to the emergence of what is known as interactive literature, a form of digital writing that transcends the boundaries of traditional texts It allows readers to participate actively, whether by modifying the text, choosing different narrative paths, or even contributing new content This form of literature represents an extension of the digital revolution, redefining the relationship between the text and the reader and creating a new form of creativity that merges literature with technology. Notable scholars, such as Fatima Al-Breiki, have studied this literary form identifying seven core characteristics that distinguish interactive literature from traditional literary forms The following presents these characteristics and their significance for the reading experience and literary creativity.

1. Open-ended Texts:

Interactive literature enjoys unprecedented openness, with no fixed beginning or ending Readers can navigate the text freely, which may conclude at a certain point on the network or extend indefinitely This reflects the nature of the digital era, which breaks temporal and spatial boundaries As a result, interactive texts resemble a live experience, where the reader feels not merely as a recipient but as a creator of events and narrative paths.

2. Reader Empowerment and Control:

In traditional literature, the reader remains a passive consumer of content without direct influence over it In interactive literature, the reader assumes an active role, feeling ownership of the text and control over its direction This feature enhances the sense of engagement and immersion, making the literary experience more vibrant and personalized, as each reader may encounter a unique journey based on their choices.

3. Absence of a Single Author and Collective Participation:

A defining characteristic of interactive literature is that it does not recognize a sole author The text becomes a collaborative space where users can modify, contribute, and participate in its creation. This phenomenon reflects the collaborative spirit of the digital era but raises questions regarding “literary ownership” and the limits of individual creativity, as the text is no longer the product of a single author but an evolving experience shaped by multiple readers and writers.

4. Multiple Temporal and Spatial Dimensions:

Unlike traditional literature, which adheres to a specific chronological and spatial sequence, interactive literature allows movement across different times and spaces within the text The reader is not confined to a single path but can jump between events and explore the textual world according to personal choices This creates a reading experience akin to navigating a digital game, where the text becomes an open space offering infinite possibilities for exploration and interaction.

5. Absence of Fixed Data and Multiple Paths:

Interactive literature contains no fixed data or single reading path; the text changes according to the reader's decisions, evolving like a living entity However, this also presents challenges for critical analysis, as there is no "final" text to study, only an infinite set of possibilities that varies from reader to reader.

6. Direct Interaction through Dialogue:

Digital tools allow readers to interact directly with the text, whether by selecting narrative paths or engaging with textual characters This transforms reading into an active experience rather than a passive one, making readers feel as though they communicate with the text This characteristic brings interactive literature closer to digital games and virtual reality, blurring the boundaries between reader, writer, and textual characters.

7. Multiple Levels of Interaction:

Interaction in interactive literature is not limited to simple choices, such as selecting an ending; it can also involve complex engagement, such as modifying and reshaping the entire text These varying levels of interaction reflect the advanced nature of this literary form, ranging from minimal intervention to complete text reconstruction, making creative boundaries unprecedentedly open.4

From the foregoing, it is evident that interactive literature is not merely a minor development in narrative techniques, but a genuine revolution that redefines the relationship between the text and the reader, It liberates the reader from being a passive recipient and grants them a creative role, allowing active participation in shaping the text This renders the reading experience dynamic and constantly evolving.

However, interactive literature also raises several critical questions: Does the openness of texts lead to a loss of aesthetic value? Can interactive texts be considered complete literary works, or do they remain open-ended experiences? What is the role of the critic in analyzing texts that continually change according to the reader's choices?

Regardless of these questions, there is no doubt that interactive literature reflects the spirit of the digital era and offers new possibilities for creativity and literary experimentation, making it one of the most innovative and exciting forms of literature in the 21st century.

4.Types of Digital Literature According to Mr. Najm:

1. Theoretical Digital Criticism: This type of digital criticism focuses on the theoretical aspects of digital culture, such as the developments of new technological innovations and their implications ;It examines how these technological advancements influence literary creation, as reflected in areas like the relationship between images and digital literature.

2. Applied Digital Criticism: This form of criticism specializes in specific digital fields, such as digital creativity or other areas, providing practical analysis and evaluation within those domains.

3. Interactive and Future-Oriented Digital Criticism: This type involves the critic's engagement with data produced by digital technologies and explores strategies for future developments across all sources of digital culture.5

The three types of digital criticism mentioned above represent a methodological complement in the study of digital literature and the analysis of its elements Theoretical digital criticism constitutes the foundational aspect, establishing the conceptual framework for studying digital literature by focusing on technological data and its impact on the creative process Applied digital criticism is manifested through the practical analysis of digital works, allowing for the examination of how modern technologies are utilized within digital texts and highlighting their creative aspects.

Interactive and future-oriented digital criticism is the most advanced, as it reflects the critic's engagement with emerging digital developments and anticipates the future of digital literature This makes it a tool capable of keeping pace with rapid transformations in the digital realm This classification illustrates the responsiveness of literary criticism to technological advancements and provides a comprehensive methodology for studying digital literature from all perspectives.

5.Classification of Interactive Literature According to Literary Genres :

Introduction:

Literature has undergone fundamental transformations with the advancement of digital technology ,These developments have produced new forms of texts that rely on multimedia and direct interaction with the reader Interactive literature is one of the most prominent manifestations of this evolution, as it breaks the traditional boundaries between the author and the reader and reshapes their relationship within a framework based on interaction and participation.

From this perspective, interactive literature can be classified according to the literary genre to which the texts belong, encompassing digital poetry, interactive novels, and digital stories. Each genre is characterized by artistic features that reflect the integration of written texts with audio-visual elements, offering readers a multi-dimensional reading experience.

This classification not only reflects differences in form and content but also highlights a transformation in the role of the reader, from a passive recipient to an active participant in meaning-making. Consequently, interactive literature emerges as a new creative space where literary arts and digital technology converge to produce a unique aesthetic experience.

5.1 Digital Poetry:

Concept of Digitalization: Saeed Yaqtin defines digitalization as "the process of transferring any type of document from an analog format to a digital format, whereby the text, still or moving images, and sound are encoded into numbers This transformation enables the document, regardless of its type to be stored and utilized through information devices."6

From Saeed Yaqtin's definition, it is evident that digitalization represents a transformation from the traditional format to the digital format, facilitating the storage and processing of documents through information devices This concept reflects the role of technology in reshaping texts, enabling new forms of literary creativity and enhancing the reader's interaction with the content.

Critic Fatima Al-Breiki defines digital poetry as a form of poetic writing that manifests exclusively through electronic media, relying on technologies provided by modern innovations, and varying in its style of presentation and method of delivery to the reader-user."7

From Fatima Al-Breiki's definition, it is clear that digital poetry is closely linked to the electronic medium, relying on modern technology to present its content The definition highlights the role of multimedia in enriching interactivity and diversity, as this type of poetry cannot be separated from the digital environment that gives it its artistic identity.

Moving to another perspective on digital poetry, it can be defined as: poetry that is delivered through electronic media made available by technological advancements" 8.

From this perspective, it is evident that this definition emphasizes the interactive relationship between digital text and technology, highlighting that digital poetry results from the fusion of literature and technology This opens new horizons for poetic creativity and reflects a transformation in the way literary texts are presented Literary texts are no longer limited to words alone; they now rely on multimedia elements such as sound, images, and motion, enhancing the reading experience and making the reader an active participant in meaning-making.

The features of interactive poetry are identified as follows: "It presents an open-ended text (Texte Open Ende) or a limitless text, giving the reader the opportunity to feel ownership over all that is presented on the network. It does not recognize a single creator of the text, which makes the readers and users of the interactive text active participants in it The endings are not uniform due to the multiple paths and choices available to the reader."9

5.2 Interactive Theatre:

Literature and art have undergone radical transformations throughout the ages, reflecting the cultural changes experienced by societies Among the most prominent of these transformations is the emergence of new forms of creative writing, including interactive theatre, which represents a modern model that redefines the relationship between the author and the audience. This type of theatre embodies a new philosophy based on involving the audience in the creative work, opening new horizons for the artistic experience

Interactive theatre is one of the manifestations of interactive literature. Fatima Al-Breiki defines it as a new form that goes beyond the traditional understanding of literary creativity, which historically focused solely on the author's role In interactive theatre, the artistic work is not limited to the text and performance; the audience becomes an active participant in shaping the theatrical presentation. This form of theatre removes the barriers between performers and the audience, allowing the latter to engage in the theatrical event and influence the course of the performance.

The significance of interactive theatre lies in its ability to break the "fourth wall" that traditionally separated the stage from the audience Instead of being passive spectators, viewers become essential components of the theatrical experience ,This interaction creates a unique experience that reflects the impact of modern technology and the evolution of communication tools in transforming artistic modes of engagement (10).

It can be said that interactive theatre represents a revolution in the concept of theatrical art, reflecting contemporary trends toward involving the audience in the creative process By transcending the traditional relationship between the author and the audience, it enhances the value of participation and grants the audience a genuine role in shaping the artistic message This theatrical form opens new horizons for creativity, yet it also raises questions regarding the limits of authorship and the role of the artist in the creative work, Interactive theatre remains a true embodiment of the digital era, where interaction becomes a fundamental element of the artistic experience

5.3 Interactive Novels: Literary Renewal in the Technological Space

Literature has undergone numerous transformations throughout history, keeping pace with the social and cultural changes experienced by humanity With the dawn of digital technology, a new literary form emerged that reflects the spirit of the digital age: the interactive novel This innovative genre aligns with technological media to redefine the traditional relationship between the author, the text, and the reader, relying on a non-linear structure based on direct interaction.

Concept of the Interactive Novel:

The interactive novel is defined as a literary text that relies on digital media, allowing the reader to participate in the progression of events and determine its narrative paths, This genre adapts to contemporary technology and is enriched by its ideas and visions, supporting the notion that interactive literature embodies the inevitable advances of technological development. In this sense, the interactive novel becomes an open text that breaks the conventional linear reading pattern and grants the reader authority in shaping the text and its narrative trajectories.

Interactive novels rely on multiple narrative paths, where readers encounter different choices that lead to varied outcomes These options are presented through digital interfaces, such as branching texts, hyperlinks, or multimedia elements like sound, images, and video This interactive structure provides readers with an individualized reading experience that changes according to their choices, making each reading encounter unique.11

Conclusion:

In conclusion, it becomes evident that literature in the digital age represents a qualitative shift in the contemporary cultural and literary landscape, reflecting the convergence of artistic creativity with the technological and social transformations imposed by the digital revolution across various spheres of life. This literary evolution has given rise to what may be termed "interactive criticism" a novel analytical tool that aligns with the nature of digital texts, which are founded upon participation and direct engagement with the reader Interactive criticism focuses on examining the relationship between the text and its audience, taking into account

the multimedia elements employed in literary works, such as hyperlinks sound and images, while analyzing how meaning is reshaped through the choices available to the recipient.

The most prominent forms of interactive literature manifest in several creative models, including interactive poetry, which opens new aesthetic horizons by blending words with sensory effects; interactive theater, which breaks traditional boundaries between performance and audience by transforming spectators into active participants in the unfolding of events; and interactive fiction, which grants readers a central role in determining narrative paths and potential endings. These diverse literary forms demonstrate that interactive literature is not merely a technological development, but rather a reflection of a deeper transformation in the relationship among author text and audience, redefining the concept of creativity and critical engagement within a multidimensional digital context.

Consequently interactive literature does not merely provide a novel experience for the audience; it also opens the door to a reconsideration of traditional critical methodologies, offering fertile ground for studying the interactions between text and audience in innovative ways ,This contributes to the expansion of both creative and critical horizons in digital-era literature and underscores the necessity of developing new analytical tools suited to this rapidly evolving reality, ensuring that literary studies remain responsive to contemporary technological and cultural challenges.

Conflict of Interest

The author declares no conflict of interest. All observations, interpretations, and recommendations presented in this article are based on professional experience and research conducted independently.

References :

1. Haddad, S. A.-D. M. (2022). Digital criticism between literature and digitality. Al-Adab Journal, 22(1), 38.
2. Ahmed, I. (2013). The epic of literature and technology: An introduction to interactive criticism (1st ed.). Alam Al-Kutub Al-Hadith for Publishing and Distribution.
3. Karam, Z. (2009). Digital literature: Cultural questions and conceptual reflections (1st ed.). Ru'ya for Publishing and Distribution.
4. Al-Breiki, F. (2006). Introduction to interactive literature (1st ed.). Arab Cultural Center.
5. Al-Bawi, I. I. F., & Al-Shammari, H. A. (2011). Digital interactive literature: Emergence and medium transformation (1st ed.). Baghdad.
6. Yaqtin, S. (2005). From text to hypertext: An introduction to the aesthetics of interactive creativity (1st ed.). Arab Cultural Center.
7. Metwally, N. A.-S. (2016). Features of the electronic text: Digital poetry, interactive literature, digital novel (1st ed., p. 177). Dar Al-Ilm wa Al-Iman.
8. Malham, I. A. (2013). Digital text and reception: An introduction to interactive literature (1st ed.). Alam Al-Kutub Al-Hadith.

Footnotes:

1. Salah Al-Din Mubarak Haddad, Digital Criticism between Literature and Digitality, Al-Adab Journal, Vol. 22, No. 1, December 2022, p. 38.
2. Ibrahim Ahmad, The Epic of Literature and Technology: An Introduction to Interactive Criticism, Alam Al-Kutub Al-Hadith for Publishing and Distribution, 1st ed., Jordan, 2013, p. 19.
3. Zuhour Karam, Digital Literature: Cultural Questions and Conceptual Reflections, Ru'ya for Publishing and Distribution, 1st ed., Cairo, 2009, pp. 12–13.
4. Fatima Al-Breiki, Introduction to Interactive Literature, Arab Cultural Center, Casablanca, Morocco, 1st ed., 2006, p. 49.
5. Iyad Ibrahim Flayj Al-Bawi & Hafiz Abbas Al-Shammari, Interactive Digital Literature: Emergence and Medium Transformation, 1st ed., Baghdad, 2011, p. 49.
6. Saeed Yaqtin, From Text to Hypertext: An Introduction to the Aesthetics of Interactive Creativity, Arab Cultural Center, Casablanca, 1st ed., 2005, p. 259.
7. Fatima Al-Breiki, Ibid., p. 77.

8. Nouman Abd Al-Samee Metwally, Landmarks of the Electronic Text: Digital Poetry, Interactive Literature, Digital Novel, Dar Al-Ilm wa Al-Iman, 1st ed., 2016, p. 177.
9. Ibrahim Ahmad Malham, Digital Text and Reception: An Introduction to Interactive Literature, Alam Al-Kutub Al-Hadith, 1st ed., Jordan, 2013, p. 20.
10. Fatima Al-Breiki, Ibid., p. 99.
11. Fatima Al-Breiki, Ibid., p. 111.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

An analysis of The Correlational Relationship between Academic Achievement and Physical Ability among Middle School Students

Boutaghane Mehdi
Laboratory of cognitive dimensions and applied perceptions of sports training sciences through multiple approaches, University of Amar Teliji Laghouat
Algeria
E-mail: m.boutaghane@lagh-univ.dz
https://orcid.org/0009-0003-3002-875X

Ayadi Achouak
Laboratory of cognitive dimensions and applied perceptions of sports training sciences through multiple approaches, University of Amar Teliji Laghouat
Algeria
E-mail: a.ayadi@lagh-univ.dz
https://orcid.org/0000-0002-0767-2665

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Academic Achievement ; Physical Ability ; Middle School Education.

Abstract
This study aims to analyze the correlational relationship between academic achievement and certain physical abilities among middle school students. We employed the descriptive method on a sample of 86 students studying in several middle schools in the Wilaya of Bordj Bou Arréridj, Algeria. The sample was intentionally selected. Three physical tests were used: the 30-meter sprint test to measure speed, the standing broad jump to measure explosive strength, and the five-step jump test (pentathlon) to measure speed-strength. Statistical data processing was conducted using arithmetic mean, standard deviation, simple and multiple linear regression, and ANOVA, via the SPSS statistical software. The results revealed a strong correlation between certain indicators of physical ability and academic achievement, which was measured through the annual average of the study sample.

Citation. Boutaghane M., Ayadi A. (2025). An analysis of The Correlational Relationship between Academic Achievement and Physical Ability among Middle School Students. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 552–560. https://doi.org/10.56352/sei/8.11.43

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 15.02.2025 | Accepted: 10.06.2025 | Published: 04.09.2025 (available online)

Introduction

Contemporary educational organizations propose that children's experiences in sport and physical education (PE) contribute to the mental acuity, skills, and strategies that are important for navigating challenges faced across the life span (America SoHaPE, 2014, p1). The perceived importance of PE and its contribution to children's academic success has varied considerably over the history of the modern educational system (Tomporowski Pd & okumura MS, 2011, p53).Over the past decadethe focus was on academic achievement and test scores, school

administrators are constantly evaluating curricula to maximize learning opportunities. In order to decide whether to add, maintain, or cut physical activity and physical education (PE) programs in elementary and middle schools(Howie Ek & Pate RR, 2012, p161).Physical activity (PA) proponents have long argued for the necessity of school-affiliated pa, suggesting that the time spent in pa would benefit health and might contribute to academic performance(Trudeau. FO & Shephard. RJ, 2008, p2).Health and educational professionals confirm that physically active students perform better in the classroom, so incorporating physical activity during every school day is essential for numerous reasons. Physical activity has physical and mental health benefits. As physical activity is linked to lowered risks of obesity, increased cardiovascular fitness, improved health, and academic achievement. (Karen rodenroth, 2010, p17). There are many debates on the effect of physical activity on academic performance among children and adolescents, ratey & hagerman (2008) and hansen (2017) also point out the impacts of physical fitness training on non-cognitive factors, such as controlling negative mood, the improvement of concentration, and the triggering of motivation for learning new things, due to the increased level of neurotransmitters in the brain.(Yilan xu, 2021, p02), many neuroscientists believe that our minds and bodies are connected "the better your fitness level, the better your brain works" (Ratey &Hagerman, 2008, p 247).

A large number of researchers from different countries have reported that there is a positive association between the overall physical fitness level and the academic 3 achievement of children and adolescents, one of the similar previous studies that addressed this topic is:

Blom, Lindsey c & Kolbo, Jérome (2011) a study of associations between health-related physical fitness, academic achievement and selected academic behaviors of elementary and middle school students in the state of mississippi. The purpose of this study was to explore the relationships among these variables by using objective measures of fitness, standardized language arts and math test scores, attendance records, discipline actions, and socio-demographic information from a sample of 2,992 mississippi (usa) public school children in grades 3-8. The sample consisted of students who were mostly male (52.4%), white (52.3%), in grades 3-5 (64.2%), within a healthy weight range (54.1%), and qualified for free/reduced price lunch (63.7%). The results indicated a statistically significant positive correlation between fitness and standardized test scores in language arts and math and a statistically significant negative relationship with school absences. The relationships remained significant while controlling for gender, race, and socioeconomic status. (Blom C & Kolbo J, 2011 p 13)

Francisco Javier Fonseca Del Pozo & Francisco Jesus Llorente Cantarero (2017) a study of physical fitness as an indicator of health status and its relationship to academic performance during the prepubertal period. The aim is to examine the relationship between physical fitness (pf), pa, obesity and academic performance (ap) in primary school children, via cross-sectional studies including 91 primary school students, aged 9 to 12 years, from the province of cordoba. Data was collected from april to june 2014. We measured pf using part of the eurofit fitness testing battery. The level of pa was measured as low or high pf and the level of obesity was measured using body mass index, waist circumference, percentage of fat mass, lean body mass, percentage of lean mass and basal metabolism. Ap by scores on the second quarter was based on the total average of scores of basic subjects and other subjects, including physical education. Cognitive performance was assessed by the spanish overall and factorial intelligence test,the results of ap were positively related to levels of pf. Students who achieve better pf score better in maths, ($p = 0.019$), natural sciences ($p = 0.024$), religion ($p = 0.018$) and physical education ($p < 0.001$). A direct association between maximal aerobic capacity with mathematics ($r = 0.325$, $p = 0.02$), ap ($r = 0.349$, $p = 0.001$) and cognitive performance (cp) ($r = 0.312$, $p = 0.003$) was observed. There was also a direct association of better jump tests with higher ap ($r = 0.328$, $p = 0.002$). (Francisco, JP &Francisco, JC , 2017, p 197)

Based on these established theoretical findings, the problem of the current study revolves around examining the relationship between academic achievement and some physical ability indicators among middle school students, The main research question is:

- Is there a statistically significant correlation between academic achievement and some physical ability indicators among middle school students?

This general question is further divided into the following sub-questions:

-Is there a statistically significant correlation between academic achievement and speed index among middle school students?

-Is there a statistically significant correlation between academic achievement and explosive Strength index among middle school students?

-Is there a statistically significant correlation between academic achievement and speed- Strength index among middle school students?

General Hypothesis:

-There is a statistically significant correlation between academic achievement and some physical ability indicators among middle school students.

This general hypothesis is further broken down into the following sub-hypotheses:

-There is a statistically significant correlation between academic achievement and speed index among middle school students.

- There is a statistically significant correlation between academic achievement and explosive Strengthindex among middle school students.

-There is a statistically significant correlation between academic achievement and speed- Strengthindex among middle school students.

This study aims to identify the correlation between academic achievement and some physical ability indicators (speed, explosiveStrength, speed- Strength) among middle school students, and the impact of physical ability on academic performance, which can be measured by the annual school average among middle school students.

The significance of this study lies in its attempt to uncover the nature of the relationship between physical ability levels and academic achievement, and to clarify the impact of physical activity and sports on academic performance, which can be measured by the annual school average among middle school students. Focusing on this age group, which represents adolescence (12–15 years), is essential, as it is a critical and sensitive stage marked by significant physical changes. The findings of this research could be beneficial in promoting physical fitness among adolescents in Algeria, maintaining their physical and mental health, and fostering their cognitive and academic development. The study may also offer suggestions for educational curriculum reforms to develop effective strategies for enhancing academic learning within a healthy educational environment.

Definition of key terms in the search :

Physical ability : A physiological state of well-being that reduces the risk of hypokinetic disease; a basis for participation in sports; and good health which enables one to complete the tasks of daily living. Components include cardio-respiratory endurance, muscle strength endurance, speed, flexibility, and body composition.

Academic achievement : The extent to which a student, teacher or institution has achieved their educational goals, commonly measured by examinations or continuous assessment. (joseph E. donnelly &al, 2016, p1200)

Middle School Education: Also known as intermediate education, this constitutes a general educational phase positioned between primary and secondary education. Students' progress to it from the primary level and subsequently advance to secondary education. The study duration spans four (04) years, typically covering the age bracket of 12–15 years, a phase frequently termed early adolescence.

Methodological Approaches

We conducted a pilot study on a sample of eight (20) students to test the data collection tools and assess the sample's responsiveness to them.

- This study was conducted in sixteen (11) secondary schools within the Bordj Bou Arreridj Province.

- The study took place from 02 February 2025 to 21 April 2025.

-Methodology Used: We adopted the descriptive method as it aligns with the nature of the research.

-Population and Sample of the Study: The research population comprised all middle school students in the Bordj Bou Arreridj Province. We purposefully selected a sample of eighty (86) second-year middle school students, distributed across sixteen (11) secondary schools.

-Identification and Measurement of Variables: Independent Variables (some physical ability indicators (speed, explosiveStrength, speed-Strength), Dependent Variable (academic achievement) which is expressed as the annual average for the academic year.

Data Collection Tools: Three (03) validated physical tests were applied:
-The first test measured speed.
-The second test measured explosive Strength.
-The third test measured speed-Strength.

Physical Tests Administered: The 30-metre sprint test (from an approximate running start) to measure speed, standing broad jump test to measure explosive Strength, Five-step jump test (pentathlon) to measure speed-Strength.

The data collection tools were subjected to scientific validation.

- Statistical Tools: We conducted several statistical analyses using the SPSS 2020 software. The following relationships were selected: (Mean, Standard deviation, Multiple linear regression, Pearson correlation coefficient, Coefficient of determination, Adjusted coefficient of determination, and F-ANOVA).

Presentation, analysis of Results

The results were as follows:

Table (01): Regression Coefficients between the Independent Variables (speed, explosive Strength, speed-Strength) indicators and the Dependent Variable (academic achievement) among middle school students.

Variable	Unstandardized Coefficients		Standardized Coefficients	T-test	Sig	(R)	(R^2)	Adjusted (R^2)
	B	Standard Error	Beta					
Regression InterceptB_0	22,63	2,54		8,96	0,00	0,45	0,20	0,17

speed	0,62	0,19	-0,42	3,19	0.002			
explosive Strength	0,38	0,88	0,05	0,43	0,66			
Speed-Strength	-1,26	0,45	-0,28	-2,77	0,007			

Source: Prepared by the researchers based on the SPSS output, 2020.

First: Theoretical Conditions

Consistency or Logical Validity of the Regression Coefficient Values and Signs

It is observed here that the variables under study fall within the framework of identifying athletically gifted students in the field of sports training.

Referring to the multiple linear regression model obtained in the study, which illustrates the significant relationship between the independent variables (speed, explosive Strength, speed- Strength) index and the dependent variable (academic achievement) among middle school students, we derive the following equation:

$$Y = -0{,}02X_1 + 0{,}06X_2 + 3{,}20$$

From this model, we conclude the following:

- The constant part B_0 has a positive value and is not equal to zero (22,63).
- The slope of the regression line B_1has a positive value (0,62).
- The slope of the regression line B_2 has a positive value (0,38).
- The slope of the regression line B_3has a negative value (-1,26).

We note that there is no contradiction between the theoretical conditions of the phenomenon under study and the results of the regression model, which explains the effect relationship between the independent variables (speed, explosive Strength, speed-Strength) index and the dependent variable (academic achievement)among middle school students.

The Explanatory Power of the Model

The explanatory power of the regression model is judged by the adjusted coefficient of determination, found in Table (01), which demonstrates the significant relationship between the dependent variable (academic achievement)and the independent variables(speed, explosive Strength,speed-Strength) index in the study sample. The value of the adjusted coefficient of determination is estimated at (0.17), meaning that the selected study variables explain (17%) of the effect of the independent variables (speed, explosive Strength, speed-Strength) index on the dependent variable (academic achievement) for the study sample. In other words, (17%) of the variations in the dependent variable (academic achievement) are attributed to the independent variables (speed, explosive Strength, speed-Strength) index in the study sample, while (83%) are due to other factors.

These results reflect the validity of the selected study variables and their capacity to explain the results of the regression model. The statistical significance of this model is justified by the significance level, which is estimated at a probability value of (0.00). This is statistically significant and aligns with the study's hypotheses.

Second: Mathematical Conditions

Table (02): Analysis of Variance (ANOVA) for the Independent Variables (speed, explosive Strength, speed-Strength) indicators and the Dependent Variable (academic achievement) among middle school students.

Source	Sum of Squares	Degrees of Freedom	Mean Squares	F Value	Sig Value
Regression	92,70	3	30,90	6,83	0,000
Error	375,41	83	4,52		
Total	468,12	86			

Source: Prepared by researchers based on SPSS output, 2020.

The purpose of calculating the ANOVA table is to analyse the total sum of squares of the dependent variable (SST), the sum of squares due to regression (SSR), and the sum of squares for the error (SSE).

Additionally, the key indicator for the quality of the regression model is the coefficient of determination (R^2), calculated as follows:

$$R^2 = \frac{\text{Sum of Squares for Regression (SSR)}}{Total\ Sum\ of\ Squares\ (SST)} = \frac{92,70}{468,12} = 0,20$$

Explanatory Power of the Model

The square root of the coefficient of determination equals the correlation coefficient$\sqrt{R^2} = \text{r}$By substituting the values, we find $\text{r} = \sqrt{0,20} = 0,45$ These results align with the outcomes shown in Table (02) and indicate that (45%) of the total variance in the dependent variable is explained by the linear relationship in the regression model between the dependent variable (academic achievement) and the independent variables (speed, explosive Strength, speed- Strength) index in the study sample. This result justifies the adjusted coefficient of determination obtained in Table (02).

Overall Significance of the Model

From Table (02), it is clear that the calculated F-value is (6,83), and the P-value is (0,00), which is less than the significance level of (0,05). This means that at least one of the regression coefficients differs from zero and is statistically significant.

Partial Significance of the Model

In the previous step, we concluded that at least one of the regression coefficients differs from zero. To determine which of these coefficients is significant, we conduct a partial significance test for the model using the T-test.

From the results in Table (01), we find:

-The constant $\boldsymbol{B_0}$ (22,63) with a probability value of (0,00), which is less than (0,05), indicating that the constant in the regression model is significant.

-The slope of the regression line $\boldsymbol{B_1}$ for the speed index among the study sample is(0,62) with a probability value of (0,002), which is less than (0,05). Therefore, we conclude that the slope for speed in the regression model is significant.

-The slope of the regression line $\boldsymbol{B_2}$ for the explosive Strength index among the study sample is (0,38) with a probability value of (0,66), which is bigger than (0,05). Thus, we conclude that the slope for explosive Strength in the regression model is not significant.

- The slope of the regression line B_3 for the speed-Strength index among the study sample is (-1,26) with a probability value of (0,007), which is less than (0,05). Therefore, we conclude that the slope for speed-Strength in the regression model is significant.

Discussion

The obtained results indicate a significant relationship between the independent variables, physical ability indicators (speed, explosive Strength, speed-Strength), and the dependent variable, academic achievement, among middle school students. Changes in the independent variables,(speed, explosive Strength,speed-Strength) indicators, have a noticeable impact on the dependent variable, academic achievement, among the study sample. The statistical model shows that (17%) of the effects on the dependent variable, academic achievement, can be attributed to the independent variables, (speed, explosive Strength, speed- Strength) indicators, among the sample participants, while (83%) is due to other factors. Additionally, (39%) of the total variance in the residuals is explained by the linear correlation of the regression model between academic achievement (dependent variable) and (speed, explosive Strength, speed-Strength) indicators (independent variables) among the study sample. This result highlights the strong correlation between academic achievement and (speed, explosive Strength, speed-Strength) indicators, which equals (0,39) with a probability value (P-value) of (0,00), less than (0,05), making it statistically significant.

Therefore, the study hypothesis is confirmed, indicating a statistically significant correlation between academic achievement and some physical ability indicators (speed, explosive Strength, speed-Strength) among middle school students. This suggests that (speed, explosive Strength, speed-Strength) indicators have a positive effect on academic achievement, meaning that academic achievement is influenced by the levels of physical fitness (speed, explosive Strength, speed-Strength). In other words, as an individual's physical fitness increase, his academic level increased, and vice versa.The systematic reviewin joseph E. donnelly & al (2016) study found evidence suggesting an associations among PA, fitness, cognition, and academic achievement. Improvements in executive function are frequently associated with acute bouts of activity and fitness. Improvements in academic achievement are also found with acute activity. (joseph E & al, 2016, p1216),The study by D. N. Ardoy & al (2014), conducted on pubescent children in Murcia, Spain, confirmed that increasing the frequency and intensity of physical education sessions positively impacts academic achievement in mathematics and language.(D. N. Ardoy & al, 2014, p52).

Our current study's results align with those of Francisco Javier Fonseca & al (2017), which found a positive correlation between academic progress programs and physical fitness levels. It was established that students with better physical fitness levels achieved higher scores in mathematics, natural sciences, religion, and physical education. (Francisco. J & al, 2017, p201),Our study's results also align with the findings of Blom, Lindsey C & al (2011) which indicated astatistically significant positive correlation between fitness and standardized test scores in Language Arts and Math and a statistically significant negative relationship with school absences. The relationships remained significant while controlling for gender, race, and socioeconomic status. Given that students who were more fit had higher test scoresand fewer absences. (Blom. C & al, 2011, p19), Our study also concurs with the findings of Redouane & Fateh (2021), which showed a strong correlation between academic performance and physical fitness components (speed, strength, endurance) among middle school students. The researchers asserted that students with higher capacities in speed, strength, and endurance tend to achieve better academically. (Redouane & Fateh, 2021, p349), According to Ronald W. Bass & al (2013), muscular strength and aerobic endurance are strongly correlated with academic achievement, though to a lesser extent than aerobic fitness stability. This emphasizes the importance of programs that promote physical fitness, such as physical education, due to their significant role in academic domains. (Ronald. W & al, 2013, p835), The study by Laura Redondo & Vicente Javier (2022) revealed a strong relationship between academic achievement and VO_2 max, diastolic blood pressure, and sleep disorders caused by breathing issues. The study indicated that high-achieving students had higher VO_2 max values, lower diastolic blood pressure, and reduced levels of sleep disorders due to respiratory problems. Conversely, the low-achieving group exhibited significantly higher levels of diastolic blood pressure and sleep disturbances, along with much lower VO_2 max scores.(laura & vicente, 2022, p04).

Youssef & Saïd (2015) confirmed that students enjoying good health and possessing essential physical fitness components are better equipped to handle the various challenges of daily and academic life. Health and fitness positively impact intelligence and mental capabilities, all contributing to strong academic achievement. (Youssef & Saïd, 2015, p193), Practicing sports has been associated with mental health, as increased self-esteem can be

observed in those who regularly engage in physical activities (Berchtold NC & al, 2005, p860), Regular exercise may also reduce stress, anxiety, and depression—all factors that can influence academic success. (Ekeland E & al, 2005, p49).

Conclusion

Based on the results of this study conducted on middle school students aged between 12 and 15, we conclude that there is a strong correlation between academic achievement and the level of physical ability among students. Academic performance is influenced by the level of physical fitness — the better a student's physical fitness, the higher their academic achievement. In other words, when an individual or student possesses good physical fitness, their functional abilities improve, supporting self-regulation and behavioral control, which positively affects the cognitive and psychological variables linked to academic achievement. This contributes to improving academic learning levels among middle school students. Therefore, the researchers recommend that decision-makers, school principals, physical education teachers, and administrators adhere to guidelines that ensure the moderate and regular practice of physical activities to improve students' physical fitness, thereby enhancing their physical health and academic learning effectiveness. We also suggest that researchers expand this study through new research and select samples from various educational regions to generalize the findings.

Conflict of Interest

The authors declare no conflict of interest. All observations, interpretations, and recommendations presented in this article are based on professional experience and research conducted independently.

References

1. America SoHaPE. (2014). *National standards & grade-level Outcomes for K-12 physical education.* Champaign, IL : Human Kinetics.
2. Tomporowski Pd, okumura MS. (2011). *PHYSIcal activity interventions and children's mental function : an introduction and overview.* Journal of Preventive medicine, 52, 53-59.doi: 10.1016/j.ypmed.2011.01.028.
3. Trudeau. FO, Shephard, RJ. (2008). *Physical education, school physical activity, school sports and academic performance.* International journal of behavioral nutrition & physical activity, 5 (10), 1-12. doi : 10.1186/1479-5868-5-10.
4. Howie Ek, Pate RR. (2012) *Physical activity and academic achievement in children : a historical perspective.* Journal of sport and health science, 1 (3), 160-169. doi: 10.1016/j.jshs.2012.09.003.
5. Karen rodenroth. (2010). *Relationship between physical fitness and academic performance.* Phd in education. Faculty of the school of education, liberty university- virginia.
6. Yilan xu. (2021). *The relationship between physical fitness and academic achievement in middle school students in shanghai.* MSC in education. Department of Education, University Of Oxford.https://ora.ox.ac.uk/terms_of_use.
7. Ratey, J., & hagerman, E. (2008). Spark : *the revolutionary new science of exercise and the brain.* New York, NY : little brown and company.
8. Blom, lc & kolbo, j. (2011). *Associations between Health-Related Physical Fitness, Academic Achievement and Selected Academic Behaviors of Elementary and Middle School Students in the State of Mississippi.*ICHPER-SD Journal of Research, 6 (1), 13-19. https://eric.ed.gov/?id=EJ936015.
9. Francisco, JP &Francisco, JC. (2017). *Physical fitness as an indicator of health status and its relationship to academic performance during the prepubertal period.* Health Promot Perspect, 7 (4), 197-204.doi:10.15171/hpp.2017.35.
10. Joseph E. Donnelly, Amanda N. Szabo-Reed. (2016). *Physical Activity, Fitness, Cognitive Function, and Academic Achievement in Children: A Systematic Review.* Med Sci Sports Exerc, 48 (6), 1197-1222. doi:10.1249/MSS.0000000000000901.

11. Ardoy DN, Fernandez-Rodriguez JM, Jimenez-Pavon D,Castillo R, Ruiz JR, Ortega FB. (2014).*A physical education trial improves adolescents' cognitive performance and academic achievement: the EDUFIT study*. Scand J Med Sci Sports, 24(1), 52-61. doi: 10.1111/sms.12093.
12. Ronald W Bass, Margaret M Coleman. (2013). *Physical fitness and academic performance in middle school students*. Journal of Acta Pædiatrica, 102 (8), 832- 837. doi: 10.1111/apa.12278.
13. Laura Redondo-Flórez, Vicente Javier Clemente-Suárez. (2022). *Relationship between Physical Fitness and Academic Performance in University Students*. International Journal of Environmental Research and Public Health, 19 (22), 1-9. doi : 10.3390/ijerph192214750.
14. Boukhraz redouane, azouz fateh. (2021). *Relation some elements of physical fitness to academicachievement in the intermediate stage*. the exellence journalin sciencs techniques of physiqcal activity andsports, 6 (1), 332-351. doi : asjp.cerist.dz/en/article/154085.
15. Fartas youssef, yahyaoui al-said. (2015). *Elements of physical fitness and their relationship to the level of academic achievement among secondary school students (15-18 years)*. social and human sciences review, 16 (33), 169-200. doi : asjp.cerist.dz/en/article/33378.
16. Ekeland E, Heian F, Hagan KB, Abbott JM, Nordheim L. (2005). *Exercise to improve self-esteem in children and young people*.systematic review, 1 (1), 1-52.doi : 10.4073/csr.2005.4.
17. Berchtold NC, Chinn G, Chou M, Kesslak JP, Cotman CW. (2005) .*Exercise primes a molecular memory for brain-derived neurotrophic factor protein induction in the rat hippocampus*.Neuroscience,133(3),853–861.doi :10.1016/j.neuroscience.2005.03.026.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Psychosocial Difficulties Associated with Adolescent Tattooing: An Exploration of the Complex Factors Influencing this Emerging Trend

Gahmous Mouna
University of Larbi Ben M'Hidi, Oum El Bouaghi
Algeria
E-mail: gahmousmouna@gmail.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Adolescent Tattooing , Tattoos motivations, Psychosocial Difficulties, potential risks, Therapeutic Interventions.

Abstract

This article explores the psychosocial difficulties faced by adolescents who get tattoos. The study investigates how individual, social, and cultural factors interact to contribute to these challenges. It examines the motivations behind adolescent tattooing, the potential risks, and the long-term impact on psychological well-being and social integration.By synthesizing existing literature and offering critical insights, this paper aims to foster a deeper understanding of the psychosocial implications of adolescent tattooing, informing clinical practice, educational initiatives, and future research endeavors.

Citation. Gahmous M. (2025). The Psychosocial Difficulties Associated with Adolescent Tattooing: An Exploration of the Complex Factors Influencing this Emerging Trend. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 561–572. https://doi.org/10.56352/sei/8.11.44

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 25.01.2025 | Accepted: 17.06.2025 | Published: 04.09.2025 (available online)

Introduction:

Adolescence is a critical juncture in human development, marked by significant changes in cognitive, emotional, and social dimensions. During this period, young individuals engage in the exploration of identity, navigate complex social relationships, and strive for greater independence. This transitional stage can present both challenges and opportunities for their psychological and social growth (Armstrong & Murphy, 1997). The practice of permanently adorning the skin with tattoos has become a common avenue for adolescents to express themselves and modify their physical appearance. Given the increasing prevalence of this phenomenon, a comprehensive

investigation is warranted. Tattooing can be a means for adolescents to articulate their individuality and forge connections with their peers (Köle, 2018). However, the decision to acquire a tattoo during adolescence carries potential risks and consequences, as young individuals may not fully comprehend the long-term implications, and tattooing can be linked to other risky behaviors (Roberts & Ryan, 2002). This study aims to explore the psychosocial challenges associated with adolescent tattooing, investigating the underlying motivations, potential risks, and the long-term implications for psychological well-being and social integration.

1. Adolescence, an expanding phase:

Adolescence is a multifaceted stage of human development, marked by a series of profound physical, cognitive, and psychosocial transformations. The adolescent years are characterized by a heightened sense of vulnerability, as individuals navigate the complexities of identity formation, peer relationships, and the desire for autonomy.

During this critical phase, adolescents experience a shift from relying on parental guidance and societal norms to a strong desire for self-determination and freedom. This transition can lead to increased risk-taking behaviors, including substance abuse, delinquency, and premature sexual activity. (Zaky, 2017) Adolescents may also engage in body modification practices, such as tattooing, as a means of asserting their individuality and exploring their evolving sense of self.

Adolescence is a stage of life that has undergone significant changes in recent decades, with the onset of puberty occurring earlier and the transition to adulthood taking longer. (Köle, 2018) This expanding phase of adolescence presents both challenges and opportunities for young individuals as they navigate the complexities of this developmental stage.

Developmental theorists describe adolescence as an extended transitional period lasting up to 20 years or more, with distinct early, middle, and late stages. The final stage involves consolidation into adulthood, marked by increased intellectual engagement, seeking new experiences, forming a stable identity, balancing self-interest and concern for others, and establishing clearer boundaries between the self and social context. (Ayubi, 2020).

The study of adolescence has attracted diverse theoretical perspectives across multiple disciplines, focusing on both individual and sociocultural aspects of development. Psychoanalytic theories have been expanded to recognize the dynamic interaction between biology, cognition, and social influences in shaping adolescent experiences. Key theories, such as Erikson's psychosocial theory, highlight the identity formation challenges faced by adolescents as they navigate different roles, values, and beliefs to establish a coherent sense of self ("Adolescence: Developmental Stage and Mental Health Morbidity," 2011)(Mauger, 1995).

Contemporary research highlights the complex, multifaceted nature of adolescent development, emphasizing the interconnected influence of various environmental factors and the importance of positive youth development and acknowledging the diversity of adolescent experiences.The psychosocial dimensions of adolescence are further complicated by the increasing impact of technological advancements and societal changes, which present both opportunities and challenges for the current generation of young people. ("Adolescence: Developmental Stage and Mental Health Morbidity," 2011)

2 . A Brief History of Tattooing:

Tattooing has a longstanding and culturally diverse history, tracing its origins back thousands of years across various civilizations globally.

Tattooing is a practice with a rich and diverse history, emerging from various cultural traditions across the globe. Archaeological evidence suggests that ancient civilizations utilized tattoos for therapeutic, ritualistic, and cultural identity purposes (Tsang & Stevenson, 2014). The act of tattooing involves the introduction of pigment into the dermis layer of the skin, creating permanent designs or patterns (Köle, 2018). The term "tattoo" is derived from the Polynesian language, reflecting the transnational nature of this art form. Historical figures, such as the Iceman Ötzi and Pazyryk chieftains, demonstrate how tattoos were employed to convey social status, group affiliation, and personal narratives, particularly in societies with limited written language (Köle, 2018). In certain contexts, like ancient Egypt, tattooing was considered a sacred and prestigious artistic practice. However, in

Europe, tattoos became associated with lower socioeconomic classes during the early 20th century. This enduring art form continues to evolve, with contemporary techniques, aesthetics, and socio-cultural meanings shaping its trajectory (Tsang & Stevenson, 2014).

Tattooing has undergone a notable transformation in its societal perception, transitioning from historical associations with deviance, criminality, and psychopathology to its contemporary status as a widely accepted form of self-expression (Johnson, 2023). Today, tattoos are embraced by individuals across diverse demographic and socioeconomic backgrounds, signifying a substantial shift in attitudes toward body modification (Johnson, 2023).

3 .Theoretical Frameworks Underpinning Adolescent Tattooing:

Adolescent tattooing can be examined through the lens of various theoretical frameworks, including the Theory of Planned Behavior and the concept of the "tattooed self."

The Theory of Planned Behavior suggests that an individual's intention to engage in a particular behavior, such as obtaining a tattoo, is influenced by their attitudes, subjective norms, and perceived behavioral control. Specifically, this theory posits that an individual's beliefs about the consequences of a behavior, the social pressures they perceive, and their perceived ability to carry out the behavior all contribute to their ultimate decision to engage in that behavior. According to this theory, adolescents' attitudes towards tattooing, the perceived social norms surrounding it, and their perceived ability to obtain a tattoo can all play a significant role in their decision to do so. The notion of the "tattooed self" provides further insight into how tattoos can serve as a means of self-expression and identity construction during adolescence. While these theoretical frameworks offer valuable perspectives on the underlying drivers and implications of adolescent tattooing, it is also important to consider the broader societal context and its impact on this phenomenon. (Köle, 2018)

Another theory that can be applied to understanding adolescent tattooing is the Developmental-Contextual Theory of Identity Formation, which suggests that the process of identity formation is highly influenced by the individual's social and cultural contexts. (Armstrong & Murphy, 1997)(Houghton et al., 1996)In the case of adolescent tattooing, this theory would suggest that the decision to obtain a tattoo is not solely a personal choice, but is also shaped by the individual's peer group, family dynamics, and broader societal attitudes towards body modification.

There is also the theory of Rebellion and Individuation, which posits that during adolescence, individuals often engage in risk-taking behaviors, such as tattooing, as a means of asserting their independence and individuality from their parents and other authority figures. This theory suggests that adolescents may view obtaining a tattoo as a way to distance themselves from the expectations and control of their parents or other authority figures, and to assert their own sense of autonomy and self-expression. The desire to rebel against societal norms and establish a unique identity can be a significant driver for adolescents to engage in body modifications like tattooing. Additionally, the physical and psychological changes associated with this developmental stage can further contribute to an individual's motivations for seeking out tattoos as a form of self-exploration and identity formation. (Köle, 2018)

From a psychoanalytic standpoint; Tattooing during adolescence can also be examined through a psychoanalytic lens, which suggests that the decision to obtain a tattoo may be driven by unconscious psychological factors. Some psychoanalytic theorists argue that tattoos can serve as a form of self-mutilation or a means of expressing unresolved conflicts or traumas, particularly those experienced during childhood. While this psychoanalytic perspective offers a unique angle for understanding the motivations behind adolescent tattooing, it is important to acknowledge that not all individuals who obtain tattoos during this developmental stage may be driven by such unconscious psychological factors. (Ferreira, 2011)(Wohlrab et al., 2007)(Armstrong & Murphy, 1997)

The interaction between genetics and environmental factors in shaping personality traits, such as impulsivity and sensation-seeking, can further contribute to an adolescent's likelihood of engaging in tattooing behaviors. The dynamic interplay of gonadal steroid hormones, such as testosterone and estrogen, during puberty exerts a profound influence on the development and maturation of brain regions involved in emotional regulation and cognitive control (Dukes, 2016; Tsang & Stevenson, 2014). These hormonal fluctuations can heighten emotional reactivity, increase sensitivity to social stimuli, and modulate reward-seeking behaviors, all of which can contribute to an adolescent's propensity to engage in tattooing as a form of self-expression or rebellion. Additionally, the

neurobiological changes that occur during adolescence can affect cognitive processes such as decision-making, risk assessment, and impulse control (Yen et al., 2012).

In addition to the theoretical frameworks discussed, it is essential to consider the broader societal context and its impact on the phenomenon of adolescent tattooing. Over the past few decades, there has been a significant shift in the societal perception of tattoos, with a transition from being associated with deviance and marginalized groups to a more mainstream form of self-expression. This shift has been influenced by various factors, including the increased media exposure of tattooed celebrities and entertainers, as well as the gradual acceptance and normalization of body modifications within mainstream culture. (Tsang & Stevenson, 2014).

4. The appeal of tattooing among adolescents: Reasons and Motivations:

Adolescents frequently engage in the practice of tattooing for a multitude of reasons, both intrinsic and extrinsic in nature. The motivations underlying their decision to obtain tattoos can be deeply personal, stemming from the individual's developmental stage, identity formation processes, and sociocultural context (Tsang & Stevenson, 2014).

4 .1 Tattoos as a form of self-expression:

Adolescents may use tattoos to convey their unique identity, values, and sense of belonging (Tsang & Stevenson, 2014). Tattoos can serve as a powerful form of self-expression, allowing individuals to externalize and visually represent their internal experiences, emotions, and personal narratives. This can be particularly meaningful for adolescents as they navigate the complex process of identity formation during this critical developmental stage. By adorning their bodies with meaningful symbols, imagery, or text, adolescents can assert control over their physical appearance and communicate aspects of their personality, interests, or life events that may be difficult to express verbally. The ability to customize and personalize their tattoos can foster a stronger sense of individuality and authenticity, which can be crucial for adolescents seeking to establish their unique identity amidst the pressure to conform to social norms (Tsang & Stevenson, 2014).

4 .2 Tattoos and identity:

Tattoos can play a significant role in the development and reformation of identity, serving as a gateway for establishing connections to social groups and forming the basis for the wearer's development of a collective identity (Johnson, 2023). The relationship between tattoos and identity is complex and multidimensional, with individuals using tattoos to express their individuality, commemorate significant life events, or affiliate themselves with particular social groups (Johnson, 2023). Adolescents view the tattoos as objects of self-identity and body art, whereas adults perceive the markings as deviant behavior (Armstrong & Murphy, 1997). Tattoos can heighten the femininity of a woman, which is highly valued by men as it signifies their fecundity. For others, tattoos are an expression of power and resistance, a way to reclaim agency over their bodies and challenge societal norms (Tsang & Stevenson, 2014).

In some cases, adolescents may use tattoos to experiment with different identities or to express aspects of themselves that they feel are not adequately recognized or validated by others.

Tattoos can serve as a means of self-discovery, as adolescents explore different symbols, designs, and locations on their bodies to find ways of representing their inner selves.

4. 3 Tattoos as a coping mechanism:

For some adolescents, the decision to get a tattoo may be driven by underlying psychosocial difficulties, such as a history of trauma, abuse, or mental health challenges. Tattoos can serve as a form of self-harm, a means of reclaiming control over one's body, or a way to externalize and visually represent internal struggles. (Tsang & Stevenson, 2014)(Johnson, 2023) In these cases, the tattoo may become a coping mechanism, a physical manifestation of the adolescent's emotional pain or a way to express their experiences in a tangible form. Tattoos are used by people to share their stories and overcome traumatic experiences (Tsang & Stevenson, 2014). The quantitative study by Liu and Lester indicated that the relationship between body modifications, including tattoos, and histories of emotional abandonment and mental, physical, and sexual abuse is statistically significant (Johnson,

2023). This finding was similarly identified in the quantitative study by Ernst and colleagues (Johnson, 2023). The study examined the association between tattoos and five types of childhood abuse and neglect (Johnson, 2023). Subsequent findings showed that the number of participants with at least one tattoo was highest among participants who also reported experiencing sexual abuse (Johnson, 2023). The study also showed that participants who scored higher on the neglect subscale were significantly more likely to have a tattoo (Tsang & Stevenson, 2014). Tattoos provide healing and a sense of identity, and promote sharing narratives during the therapeutic process (Alter-Müri, 2019). Tattoos can be used as accomplishments and strengths (Alter-Müri, 2019). Tattoos can also act as a constant reminder of what they have overcome, however, problematic it may be (Tsang & Stevenson, 2014).

4. 4 Adolescent tattoos and the quest for individuality:

The drive for individual identity and self-expression is a central aspect of adolescent development. According to research, the process of obtaining a tattoo can be closely linked to an adolescent's desire to establish a unique personal identity and differentiate themselves from their peers. (Pfeifer & Berkman, 2018; "The Promise of Adolescence," 2019) Tattoos can serve as a tangible representation of an adolescent's values, interests, and life experiences, allowing them to externalize and communicate aspects of their personality that may not be readily apparent through their physical appearance or social interactions.

In an environment where conformity and group-based identities are often emphasized, the permanence and visibility of a tattoo can represent a powerful statement of individual identity. Adolescents may use tattoos to signal their membership in specific social groups, subcultures, or belief systems, while simultaneously expressing their personal values, interests, and life experiences.research have suggested that tattoos can serve as a "visual diary" for adolescents, allowing them to narrate their lived experiences and aspirations through the permanent marks on their bodies. (Tsang & Stevenson, 2014)(Pfeifer & Berkman, 2018)

4 .5 Adolescent Tattoos and the Expression of Rebellion:

The adolescent years are often characterized by a desire to assert independence, challenge authority, and rebel against societal norms. Tattoos can serve as a physical manifestation of this rebellious spirit, allowing adolescents to defy parental and societal expectations. The permanence of a tattoo can be seen as a defiant act, a way for adolescents to assert their autonomy and make a lasting statement about their personal choices and values. (Armstrong & Murphy, 1997)

In some cases, tattooing may be a way for adolescents to express their resistance to mainstream culture and align themselves with alternative or counterculture movements.

Many adolescents view tattoos as a form of self-expression and a means of rejecting traditional societal expectations. The decision to obtain a tattoo, especially one that is visible or perceived as controversial, can be a way for adolescents to challenge the status quo and assert their independence from parental or cultural influences. (Köle, 2018).

Furthermore, the association of tattoos with marginalized or non-conformist subcultures can be appealing to adolescents who seek to differentiate themselves from mainstream society and express their non-conformist beliefs and values. The act of getting a tattoo can be a symbolic rejection of societal norms and a way for adolescents to assert their unique identity and resist the pressure to conform. (Armstrong & Murphy, 1997)

however, highlights (Tsang & Stevenson, 2014) that the increasing mainstream acceptance of tattoos has led to a shift in their perception, with tattoos becoming more commonly associated with self-expression and individuality rather than deviance.

4. 6 The pain and hardness of the tattoo experience:

The physical sensation of receiving a tattoo can be a significant factor motivating some adolescents, as they may view it as a test of their endurance and resilience. The pain associated with the tattooing process can be seen as a form of self-inflicted ordeal, allowing adolescents to demonstrate their ability to withstand discomfort and assert control over their bodies. Furthermore, the act of obtaining a tattoo can serve as a bonding experience for adolescents who undergo the procedure together, as the shared experience of pain and the anticipation of the final

result can create a sense of camaraderie and strengthen social connections among peers. Tattoos are often considered a reflection of the inner self, providing a basis for meaning and a sense of belonging (Tsang & Stevenson, 2014). Despite the apparent health risks involved, the desire to achieve an aesthetically pleasing appearance and the associated sense of well-being often outweighs such concerns (Tsang & Stevenson, 2014).The experience of physical pain during the tattooing process is associated with the release of endorphins, the body's natural opioid chemicals, which can elicit positive emotions and a numbing effect. This neurobiological response has been proposed as a potential explanation for the reported phenomenon of some individuals expressing a 'desire for pain' in the context of receiving tattoos. In effect, the pain may be perceived as a gratifying sensation or even serve as a coping strategy for managing psychological distress. (Köle, 2018).

Tattoos have transformed from a fringe practice to a mainstream, lucrative industry (Johnson, 2023), reflecting their growing social acceptance. These body modifications serve multifaceted purposes, functioning as amulets, status symbols, declarations of love, religious symbols, adornments, and even forms of punishment, yet always bearing personal significance, whether simple or elaborate. Tattoos transcend the surface of the skin, serving as testaments to individuals' resilience and capacity for joy, acting as reminders of identity and connection (Lim et al., 2013)(Tsang & Stevenson, 2014)(Köle, 2018).

4 .7 The Role of Peer Influence and Social Belonging:

Adolescence represents a crucial juncture in the social maturation process, characterized by a strong desire for peer acceptance and a sense of belonging within social groups. Tattoos can play a significant role in this process, as they can serve as a visual marker of group affiliation, shared experiences, and a means of strengthening social bonds. The desire to conform to peer norms and gain social approval can be a powerful driver behind an adolescent's decision to obtain a tattoo, as they seek to establish their place within their social networks and cultivate a sense of belonging. (Armstrong & Murphy, 1997)

Adolescents may be influenced by their peers' tattoo practices, with the desire to emulate or be accepted by their social circles leading them to seek out tattoos as a way to signal their membership and alignment with a particular group. The presence of tattoos within an adolescent's social network can normalize the practice, making it appear more acceptable and desirable. Moreover, the act of getting a tattoo with a friend or in a group setting can further strengthen the social bonds and camaraderie within the peer group, as it becomes a shared experience and a visual representation of their connection. (Tsang & Stevenson, 2014)(Daulay et al., 2018)

The peer group's influence on tattooing behavior can be particularly strong during adolescence, as young people are more susceptible to social influence and conformity compared to adults. The fragility of adolescent peer relationships and the risk of social isolation may lead young people to prioritize aligning their behavior with that of their peers, rather than attempting to shift the group's norms. (Haas & Schaefer, 2014).

4. 8. Familial and social factors in adolescent tattooing:

The decision to get a tattoo during adolescence is often influenced by a complex interplay of familial and social factors. Parental attitudes and values regarding body modifications can significantly impact an adolescent's decision to get a tattoo, with more permissive or approving parental views potentially encouraging the behavior (Children, 2011).

The modern family structure prioritizes planned and desired children over intergenerational bonds (Breton, 2016), leading to a less nurturing environment for adolescents. As a result, young people's focus has shifted towards peer groups and adolescent culture, which can foster belonging and self-expression, but may also delay their transition to adulthood and perpetuate an adolescent consumption-oriented mindset (Breton, 2016).

Furthermore, the quality of the parent-child relationship and the level of parental monitoring and support can act as a buffer against the negative consequences associated with adolescent tattooing, as strong familial bonds and open communication can help guide young people towards healthier coping strategies and decision-making. (Sacca et al., 2021)

The influence of peer groups and social circles is also a critical factor in shaping adolescent attitudes and behaviors towards tattooing.

As discussed earlier, the desire to belong to a particular social group and the pressure to conform to group norms can be powerful drivers for adolescents to seek out tattoos as a means of signaling their membership and status within that group. (Tsang & Stevenson, 2014)(Weiler et al., 2024).

The broader social and cultural environment can also shape adolescent attitudes towards tattooing. Exposure to tattoo culture, either through media, peers, or one's local community, can normalize the practice and make it seem like a common or even desirable form of self-expression. In contrast, communities with more conservative social norms and negative perceptions of tattoos may discourage adolescents from getting them, leading to a lower prevalence of tattooing among young people in those areas. (Silver et al., 2009).

5. Psychosocial Difficulties: Emotional Regulation, Identity Formation, and Social Integration:

Tattoos can become intertwined with emotional regulation, identity formation, and social integration, potentially leading to psychosocial difficulties for some adolescents.

5. 1 Emotional Regulation Difficulties:

Some adolescents may use tattoos as a form of self-soothing or emotional regulation, particularly in response to experiences of stress, anxiety, or depression. In such cases, the act of getting a tattoo may provide a temporary sense of control or relief from negative emotions, but it can also serve as a maladaptive coping mechanism that avoids addressing the underlying emotional issues.

Tattoos can provide a sense of control or empowerment for adolescents who feel like they lack control over other aspects of their lives. The act of choosing a design, selecting a location on the body, and enduring the tattooing process can create a sense of agency and self-determination, which can be particularly appealing for adolescents who are navigating feelings of powerlessness or uncertainty.

However, relying on tattoos as a primary means of emotional regulation can have negative consequences in the long run. The temporary relief or sense of control that tattoos provide may be addictive, leading to a cycle of impulsive tattooing behavior and emotional dependence on the practice.

This dependence on tattoos for emotional regulation can also hinder the development of more adaptive coping strategies, such as seeking therapy, engaging in healthy activities, or developing strong support networks (Johnson, 2023).

Moreover, the long-term consequences of impulsive or poorly considered tattoo decisions can exacerbate emotional difficulties, as regret, social stigma, or dissatisfaction with the tattoo can lead to increased feelings of anxiety, depression, or low self-esteem (Dukes, 2016).

5. 2 Identity Formation Issues:

Tattoos can serve as a visual representation of one's identity, communicating aspects of the self to others and reinforcing one's sense of self-understanding. However, the use of tattoos for identity formation can also present challenges for adolescents, particularly if their identity is still developing or if they are struggling with issues of self-esteem or self-acceptance. This can lead to feelings of inauthenticity and disconnection, as the individual struggles to reconcile their external image with their internal sense of self (Johnson, 2023)

Moreover, relying on tattoos as a primary means of identity formation can hinder the development of a more complex and nuanced sense of self, as the individual may become overly focused on their external appearance and neglect other important aspects of their personality and character (Alter-Müri, 2019).

The study highlights the role of sexual abuse and the frequency of tattoos to overcome such traumatic experiences to overcome the feeling of alienation of their bodies (Tsang & Stevenson, 2014).

Furthermore, the permanent nature of tattoos can create challenges for adolescents as their identities evolve over time.

What may have seemed like a meaningful or relevant tattoo at one point in their lives may later become a source of embarrassment or regret, as their tastes, values, and beliefs change.

Tattoos are seen as objects of self-identity for adolescents (Armstrong & Murphy, 1997).

5. 3 Social Integration Challenges: Confronting Social Stigma and Discrimination:

Adolescent tattooing can significantly affect an individual's social integration and relationships. Tattoos can lead to stigma, discrimination, and exclusion from certain social groups or institutions, despite their potential to facilitate bonding and connection with like-minded individuals. Visible tattoos are often viewed negatively, as they may be perceived as unprofessional, rebellious, or linked to deviant behavior, which can ultimately harm employment opportunities and future prospects (Lim et al., 2013).

The concept of labeling theory suggests that individuals with visible tattoos may be labeled as "different" or "outsiders" by society, which can result in a self-perpetuating cycle of social exclusion and diminished life prospects and increased marginalization, especially during the crucial developmental stage of adolescence (Liu, 2014)(Dukes, 2016). Adolescents with tattoos may encounter strained family relationships, experience bullying and exclusion from their peers, and face prejudice and discrimination in various social settings, all of which can exacerbate feelings of isolation, low self-worth, and challenges in developing healthy interpersonal relationships (Silver et al., 2009).

Joining specialized tattoo communities can offer tattooed individuals a sense of belonging and social support, allowing them to share personal stories, express distinct identities, and collectively challenge societal norms. However, this dependence on such insular communities may also restrict exposure to diverse perspectives, potentially impeding personal growth and critical thinking. Within these insular environments, individuals may primarily encounter viewpoints and values that reinforce their own, which could constrain their capacity for personal development and nuanced analysis. (Drazewski, 2013; Solís-Bravo et al., 2019; Vanston & Scott, 2008).

In contrast, within certain subcultures, tattoos are viewed as acceptable and can even promote a sense of belonging and unity among group members (Köle, 2018). They function as symbols that represent group identity and foster camaraderie. However, it is important to recognize that these benefits may be confined to specific social circles, as individuals with tattoos may still face stigma and discrimination in wider societal contexts.

6. Potential Negative Consequences and Risks of Adolescent Tattooing:

Although tattooing can function as a avenue for self-expression and identity development among adolescents, it is also linked to a range of potential negative outcomes and dangers.

One significant concern is the increased likelihood of engaging in other high-risk behaviors among adolescents with tattoos. Studies have shown that adolescents with tattoos are more likely to participate in activities such as substance abuse, risky sexual behavior, and delinquent acts, suggesting a correlation between tattooing and a general propensity for risk-taking (Roberts & Ryan, 2002).

Another key concern is the potential for long-term physical and mental health consequences. Tattooing can expose adolescents to the risk of blood-borne infections, such as hepatitis B and C, as well as bacterial infections, allergic reactions, and the potential for scarring or disfigurement. Furthermore, the permanence of tattoos can lead to significant regret and psychological distress later in life, particularly as adolescents' interests, values, and self-perceptions evolve over time.(Vanston & Scott, 2008)

Moreover, the social stigma and discrimination associated with tattoos can further exacerbate the negative impact on mental health, leading to feelings of isolation, low self-esteem, and body image dissatisfaction. (Yen et al., 2012).

Additionally, the social stigma and discrimination associated with tattoos, particularly in certain professional and educational contexts, can have significant negative impacts on an adolescent's future opportunities and prospects. This social stigma can further exacerbate the challenges faced by adolescents with tattoos, as they may encounter obstacles in securing employment, accessing educational opportunities, or forming meaningful

relationships with those who hold negative perceptions about body modifications. The lasting consequences of these social barriers can significantly limit an adolescent's personal and professional growth, underscoring the need for a more accepting and inclusive societal approach to the expression of identity through tattoos.(Dukes & Stein, 2014)

The psychosocial difficulties associated with adolescent tattooing are multilayered and complex in their dimensions. Tattoos can function as a mechanism for self-expression, identity development, and social integration, but they also entail considerable risks and potential adverse outcomes (Roberts & Ryan, 2002)(Tsang & Stevenson, 2014)(Vanston & Scott, 2008).

Ultimately, the complex interplay between individual motivations, psychosocial factors, and societal perceptions highlights the need for a multidimensional approach to understanding and addressing the challenges associated with adolescent tattooing.

7. The Role of Therapeutic Interventions and Support Systems:

Addressing the psychosocial challenges of adolescent tattooing requires a multifaceted approach that incorporates therapeutic interventions and support systems.

Therapists could explore the underlying motivations and meanings behind tattoos, helping adolescents develop a deeper understanding of their identities and address any underlying emotional or psychological issues (Johnson, 2023).

Tattooing can be linked to traumatic experiences, where individuals may use tattoos to regain control over their bodies and express their experiences (Johnson, 2023; Tsang & Stevenson, 2014).

Sharing narratives through tattoos can be therapeutic, serving as a reminder of what one has overcome (Tsang & Stevenson, 2014).

Schools, community organizations, and healthcare providers can play a crucial role in providing education and resources to adolescents and their families about the risks and potential consequences of tattooing.

For example, incorporating information about the potential risks and benefits of tattoos into health education curricula can promote informed decision-making among adolescents (Armstrong & Murphy, 1997).

Furthermore, fostering open communication and supportive relationships within families and peer groups can help adolescents navigate the social and emotional challenges associated with tattooing.

Moreover, interventions should aim to promote positive self-esteem, body image, and coping skills among adolescents, empowering them to make informed decisions about their bodies and their futures.

Additionally, educating parents, educators, and other influential adults about the psychosocial complexities of adolescent tattooing can help foster greater understanding, empathy, and support for young people who choose to get tattoos.

Incorporating information about blood-borne diseases, permanent markings, and the growing and changing nature of adolescents themselves can promote informed decision-making in health education (Armstrong & Murphy, 1997).

It has been reported that tattoos allow the wearer to “express what is inner, by altering the outer surface of the body itself (Johnson, 2023).

Therefore, in clinical settings, visible tattoos may serve as an initial point of contact, providing clinicians with valuable opportunities to explore deeper psychological issues and facilitate meaningful therapeutic engagement.

The frequency of tattoos can play a role in overcoming such traumatic experiences in order to overcome the feeling of alienation of their bodies (Johnson, 2023; Tsang & Stevenson, 2014).

Ultimately, by addressing the psychosocial difficulties associated with adolescent tattooing through a combination of therapeutic interventions, family support, educational initiatives, and harm reduction strategies, we can empower adolescents to make informed decisions about their bodies and identities, while promoting their overall well-being and social integration.

8 . Gaps in the Literature and Future Directions for Research:

While the existing research has provided valuable insights into the psychosocial difficulties associated with adolescent tattooing, there are still several gaps in the literature that warrant further investigation.

A key focus for future research should be examining the long-term trajectories and outcomes of adolescents who have obtained tattoos, particularly with respect to their educational attainment, professional achievements, and social integration. Longitudinal studies could shed light on the lasting impact of tattoos acquired during adolescence and help identify effective strategies for mitigating potential harms.

Additionally, more research is needed on the role of cultural and societal factors in shaping the psychosocial experiences of adolescents with tattoos. Cross-cultural comparisons and examinations of the influence of media, social norms, and institutional policies could provide valuable insights into the complex sociocultural dynamics at play. (Weiler et al., 2024)(Köle, 2018)(Telesia et al., 2020)(Sacca et al., 2021). Further investigation into the cognitive and emotional processes underlying the aesthetic appreciation of tattoos is warranted (Weiler et al., 2024).

Conclusion:

The existing research on the psychosocial difficulties associated with adolescent tattooing highlights the complex and multifaceted nature of this issue.

While adolescents may be drawn to tattoos as a means of self-expression and identity formation, the social stigma, potential health risks, and links to other high-risk behaviors can have profound and long-lasting consequences.

To effectively address this challenge, a comprehensive, multidimensional approach is needed one that considers the unique developmental needs of adolescents as well as the broader social and cultural factors at play.

By deepening our understanding of the underlying motivations and psychosocial factors involved, researchers and policymakers can work to develop targeted interventions and support services to assist adolescents in addressing the multidimensional challenges associated with body modification practices in a safe and healthy manner.

Conflict of Interest

The author declares no conflict of interest. All observations, interpretations, and recommendations presented in this article are based on professional experience and research conducted independently.

References:

1. Adolescence: Developmental stage and mental health morbidity. (2011). In International Journal of Social Psychiatry (Vol. 57, p. 13). SAGE Publishing. https://doi.org/10.1177/0020764010396691
2. Alter-Müri, S. (2019). The Body as Canvas: Motivations, Meanings, and Therapeutic Implications of Tattoos. In Art Therapy (Vol. 37, Issue 3, p. 139). Taylor & Francis. https://doi.org/10.1080/07421656.2019.1679545
3. Armstrong, M. L., & Murphy, K. (1997). Tattooing: another adolescent risk behavior warranting health education. In Applied Nursing Research (Vol. 10, Issue 4, p. 181). Elsevier BV. https://doi.org/10.1016/s0897-1897(97)80560-5

4. Ayubi, S. A. (2020). The fenomenal of adolescent deviant behavior students in school at Genteng City Distric Banyuwangi East Java. In IOP Conference Series Earth and Environmental Science, 485(1), Article 012062. https://doi.org/10.1088/1755-1315/485/1/012062

5. Breton, D. L. (2016). L'adolescence et la peau. In Enfances & Psy (Issue 4, p. 70). Éditions Érès. https://doi.org/10.3917/ep.068.0070

6. Children, Y. and F. B. on. (2011). The Science of Adolescent Risk-Taking: Workshop Report. https://www.amazon.com/Science-Adolescent-Risk-Taking-Workshop-Report/dp/0309158524

7. Daulay, A. A., Daharnis, D., & Afdal, A. (2018). The Role of Counselor in Developing Student's Assertive Behavior. In Proceedings of the International Conferences on Educational, Social Sciences and Technology - ICESST 2018 (p. 201). https://doi.org/10.29210/2018129

8. Drazewski, P. (2013). Tattoo stigma and job discrimination (Publication No. 13414) [Doctoral dissertation, University of Saskatchewan]. SK Commons. https://doi.org/10.30707/etd2013.drazewski.p

9. Dukes, R. L. (2016). Regret among tattooed adolescents. In The Social Science Journal (Vol. 53, Issue 4, p. 455). Taylor & Francis. https://doi.org/10.1016/j.soscij.2016.08.004

10. Dukes, R. L., & Stein, J. A. (2014). Evidence of Anticipatory Socialization Among Tattooed, Wannabe, and Non-Tattooed Adolescents. In SAGE Open (Vol. 4, Issue 2). SAGE Publishing. https://doi.org/10.1177/2158244014538261

11. Ferreira, V. S. (2011). Becoming a Heavily Tattooed Young Body. In Youth & Society (Vol. 46, Issue 3, p. 303). SAGE Publishing. https://doi.org/10.1177/0044118x11427839

12. Haas, S. A., & Schaefer, D. R. (2014). With a Little Help from My Friends? Asymmetrical Social Influence on Adolescent Smoking Initiation and Cessation. In Journal of Health and Social Behavior (Vol. 55, Issue 2, p. 126). SAGE Publishing. https://doi.org/10.1177/0022146514532817

13. Houghton, S., Durkin, K., Parry, E., Turbett, Y., & Odgers, P. (1996). Amateur tattooing practices and beliefs among high school adolescents. In Journal of Adolescent Health (Vol. 19, Issue 6, p. 420). Elsevier BV. https://doi.org/10.1016/s1054-139x(96)00023-7

14. Johnson, L. M. (2023). Ink Therapy: The Use of Tattoos by Male Survivors of Sexual Trauma [Doctoral dissertation, Liberty University]. Doctoral Dissertations and Projects. https://digitalcommons.liberty.edu/doctoral/4729

15. Köle, E. (2018). Explanation of Body Modification and Tattoo through Theory of Planned Behavior. http://i-rep.emu.edu.tr:8080/xmlui/handle/11129/4712

16. Lim, W. M., Ting, D. H., Leo, E., & Jayanthy, C. (2013). Contemporary Perceptions of Body Modifications and Its Acceptability in the Asian Society: A Case of Tattoos and Body Piercings. In Asian Social Science (Vol. 9, Issue 10). Canadian Center of Science and Education. https://doi.org/10.5539/ass.v9n10p37 .

17. Mauger, G. (1995). Jeunesse: l'âge des classements. Revue des politiques sociales et familiales, 40, 19-36. Récupéré sur https://www.persee.fr/doc/caf_1149-1590_1995_num_40_1_1690

18. Pfeifer, J. H., & Berkman, E. T. (2018). The Development of Self and Identity in Adolescence: Neural Evidence and Implications for a Value Based Choice Perspective on Motivated Behavior. In Child Development Perspectives (Vol. 12, Issue 3, p. 158). Wiley. https://doi.org/10.1111/cdep.12279

19. Roberts, T. A., & Ryan, S. A. (2002). Tattooing and High-Risk Behavior in Adolescents. In PEDIATRICS (Vol. 110, Issue 6, p. 1058). American Academy of Pediatrics. https://doi.org/10.1542/peds.110.6.1058

20. Sacca, L., Rushing, S. C., Markham, C., Shegog, R., Peskin, M. F., Hernandez, B., Gaston, A., Singer, M., Trevino, N., Correa, C. C., Jessen, C., Williamson, J., & Thomas, J. (2021). Assessment of the Reach, Usability, and Perceived Impact of "Talking Is Power": A Parental Sexual Health Text-Messaging Service and Web-Based Resource to Empower Sensitive Conversations with American Indian and Alaska Native Teens. In International Journal of Environmental Research and Public Health (Vol. 18, Issue 17, p. 9126). Multidisciplinary Digital Publishing Institute. https://doi.org/10.3390/ijerph18179126

21. Silver, E., VanEseltine, M., & Silver, S. J. (2009). Tattoo Acquisition: A Prospective Longitudinal Study of Adolescents. In Deviant Behavior (Vol. 30, Issue 6, p. 511-530). https://doi.org/10.1080/01639620802467771

22. Solís-Bravo, M. A., Flores-Rodríguez, Y., Tapia-Guillen, L. G., Gatica-Hernández, A., Guzmán-Reséndiz, M., Salinas-Torres, L. A., Vargas-Rizo, T. L., & Albores-Gallo, L. (2019). Are Tattoos an Indicator of Severity of Non-Suicidal Self-Injury Behavior in Adolescents? In Psychiatry Investigation (Vol. 16, Issue 7, p. 504). Korean Neuropsychiatric Association. https://doi.org/10.30773/pi.2019.03.06

23. Telesia, L., Kaushik, A., & Kyriakopoulos, M. (2020). The role of stigma in children and adolescents with mental health difficulties. Current Opinion in Psychiatry, 33(6), 571–576. https://doi.org/10.1097/yco.0000000000000644

24. The Promise of Adolescence. (2019). In National Academies Press eBooks. https://doi.org/10.17226/25388

25. Tsang, A., & Stevenson, A. (2014). 'My body is a journal, and my tattoos are my story.' 1 - Exploring the motivations and meanings of tattoos using a multi qualitative-method approach. Sociology Open, 1(1), 2379-2392. https://doi.org/10.1177/2053958514553143

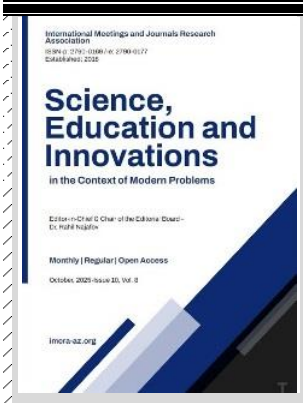
26. Vanston, D. C., & Scott, J. M. (2008). Health risks, medical complications and negative social implications associated with adolescent tattoo and body piercing practices. In Vulnerable Children and Youth Studies (Vol. 3, Issue 3, p. 221). Routledge. https://doi.org/10.1080/17450120802017728

27. Weiler, S. M., Duer, C., Krämer, D., & Jacobsen, T. (2024). Effects of tattoos on the aesthetic appreciation of human stimuli as influenced by expertise, tattoo status, and age reflecting internalized social norms. In PLoS ONE (Vol. 19, Issue 12), Article e0313940 https://doi.org/10.1371/journal.pone.0313940

28. Wohlrab, S., Stähl, J., & Kappeler, P. M. (2007). Modifying the body: Motivations for getting tattooed and pierced [Review of Modifying the body: Motivations for getting tattooed and pierced]. Body Image, 4(1), 87. Elsevier BV. https://doi.org/10.1016/j.bodyim.2006.12.001

29. Yen, C., Hsiao, R. C., Yen, J., Yeh, Y., Wang, P., Lin, H., & Ko, C. (2012). Tattooing among high school students in southern Taiwan: The prevalence, correlates and associations with risk taking behaviors and depression. In The Kaohsiung Journal of Medical Sciences (Vol. 28, Issue 7, p. 383. https://doi.org/10.1016/j.kjms.2011.10.008

30. Zaky, E. A. (2017). Adolescence; A Bio-Psychosocial Maturational Stage or an "Out of Control" Phase!!! In Clinical Depression (Vol. 3, Issue 3). OMICS Publishing Group. Article e105. https://doi.org/10.4172/2572-0791.1000e105


International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Online Storytelling Before and After AI: Shifting Realities in Text, Image, Video, and Audience Experiences

Fawzi Cheriti
Dr.
Department of Information and Communication Sciences, University of Ghardaia
Algeria, Cheriti.
E-mail: fawzi@univ-ghardaia.edu.dz / https://orcid.org/0000-0003-2147-0856

Dalila Mehiri
Dr.
Department of Information and Communication Sciences, University of Ghardaia
Algeria
E-mail: mehiri.dalila@univ-ghardaia.edu.dz /https://orcid.org/0009-0003-0751-4303

Aboubakr Saiti
Dr.
Department of Information and Communication Sciences, University of Ghardaia
Algeria
E-mail: saiti.aboubakr@univ-ghardaia.edu.dz /https://orcid.org/0009-0009-4144-9342

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Online storytelling, audience experiences, news innovation, technological impact AI disruption, AI-driven media.

Abstract

This study explores how online storytelling has evolved before and after AI, focusing on changes in text, image, video, and audience experiences. It analyzes how digital media platforms adapt their informational strategies in response to AI challenges. This comparative content analysis explores the evolution of online storytelling strategies by theorizing the engagement of these platforms with the pressures and benefits of AI integration. The results reveal important new perspectives on how digital media might adapt to technological disturbance. The diversity of content published across digital press platforms and the disparity with variance between the size, type, and methods of displaying content among these platforms highlight the dynamic changes in audience experiences. Text remains the most common form of online storytelling, but images and videos are increasingly highly regarded in the news industry, reflecting a broader shift in how information is consumed and engaged with by audiences. Our work presents a new way of understanding the evolution of online storytelling through various forms, emphasizing the move towards more significant visual interaction without losing sight of the importance of text. By examining online storytelling before and after AI, this study underscores how digital platforms navigate and reshape audience experiences through adaptive content strategies in an evolving media landscape.

Citation. Cheriti F., Mehiri D., Saiti A. (2025). Online Storytelling Before and After AI: Shifting Realities in Text, Image, Video, and Audience Experiences. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 573–586. https://doi.org/10.56352/sei/8.11.45

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 27.05.2025 | Accepted: 29.06.2025 | Published: 01.09.2025 (available online)

1- Introduction

The shift to the digital age has also shaped other media and content industries beyond journalism – in print, broadcast, music, and gaming – reconfiguring every aspect of their operations and reflecting the changes seen in journalism, producing content, audience relations, and technology. They have revolutionized the creation, production, distribution, use, and storage of information. News platforms struggle to exist and excel in the current competitive news ecosystem (Mishra, 2017). Additionally, the move toward digital platforms and the global information explosion have created a swift and intertwined media environment. It meant that reporters had to match their hands with the changes in media technologies (Waisbord 2019; Pavlik 2001). This has expanded the "5Ws and a H" framework (Ambadas, 2024) so you can use it in data journalism, immersive storytelling, mobile journalism and AI-driven content creation. However, the boundaries between citizens, activists, professional journalists and corporations are being eroded by these developments, with a continuing central role in mediating information (Witschge et al., 2016). Into this shifting environment, scholars have adapted to study news produced by both traditional and non-traditional actors, as well as news producers and audience use practices. Online journalism is changing, and journalists along with scholars need new ways to produce high-quality, up-to-date content that is more accurately based on the media environment we work within (Ambadas 2016; Witschge et al., 2016).

This also leads to the apparent discussion of the basis of innovation —in more precise terms, the convergence with several new technologies and user practices — or, as highlighted even a couple of decades ago, its blend with journalism as a convergence product: the latter note might have served what journalism has turned into in present-day immediacy of the digital realm: the necessity for an engaging audience, for one, and at utilizing the prettiness of the similar empowerment processes that have reshaped their engagement in modern mass communication. The trick to linking the audience is excellent, compelling content; many contemporary digital newsrooms know this (Gravino, Servedio, & Tria, 2024). However, online journalism is more than articles since it includes video, audio, and graphics as interactive graphics. It also uses social media to enhance news coverage and manage the news. As stated by Langton and colleagues (2021), content personalization using AI and machine learning algorithms is a game changer for a personalized user experience without compromising the integrity of journalists. Intelligent recommendation engines are enabled by behavior analytics for content recommendations, and users do not need to sacrifice their privacy at any time. Adaptive Media; An intelligent content distribution platform that provides newsrooms with behavior analytics for intelligent recommendation engines without compromising user privacy. This customization is impossible without privacy-preserving frameworks in online journalism, which are limited in numbers but increasingly needed. As we measure the impact of content, online journalism certainly is changing. It is not just story views anymore; it is how long readers spend on a story.

2- Theoretical Foundation and Literature Review

Modern media theories have played a pivotal role in shaping the evolution of online journalism by examining changes in the production, consumption, and dissemination of news. One such theory, Castells's Network Society Theory (1996), explores how digital networks have restructured societal structures (Fernández-Ardèvol & Ribera-Fumaz, 2022). This theory applies specifically to online journalism, whereby with the shift in the news system from the traditional media systems to the networked digital platforms, the news is no longer stored and forwarded or broadcasted on a scheduled basis. It does not have many flows, but it flows continuously across global networks, promoting greater audience participation, real-time updates, and access to different content sources, fundamentals of modern online journalism.

Agenda-setting theory (McCombs & Shaw, 1972) is another theory directly related to our study's subject because it assumes that the media occupy a pivotal position in determining what people perceive about a particular topic and ranking their importance before others in people's eyes for implementation. (Safran, Safar, & Almakaty, 2024). This theory has been made more truthful in today's digital news environment, where online journalism outlets and news aggregators decide which information is popular among the public and coordinate the entire process. Moreover, algorithms now considerably define what news we watch, discuss, or interact with more actively. This implies that media plays a role whenever news is broken and personalized to fit people's choice and subject matter of desired news delivery; such news would prevent the falsification and manipulation of the truth that we are made to believe and act upon.

Furthermore, the concept of disruption, which Christ Jensen put forward earlier in his theory of disruptive innovation, bears the most in unraveling the misfortune that traditional media companies are likely to fall into in the age of artificial intelligence. Based on disruptive innovation technology, new technologies are launched to reach the low-end or niche market before completely displacing the incumbent industries. (Felix, Lee, Eddie, & Yu, 2024). AI is a revolutionary technology in the field of online journalism which poses great threat to traditional production modes such as investigation and editing.This research seeks to investigate how online news outlets, including TMZ, Huffington Post, and Gizmodo, manage AI's challenges by changing their content creation and news delivery to retain the audience. The manner in which these platforms will be able to innovate while keeping the core values of Journalism will help explain how the traditional media will respond to technological advancement.

Ultimately, (Jenkins, 2006) argues that digital media allows audiences to engage with content actively, produce their own media, and collaborate with others (Ihlebæk, 2017). This change in online journalism represents a move away from being a passive audience and towards one that now acts both as a creator and distributor of content. This participatory culture finds expression in citizen journalism, user-generated content, news consumption as a social media interaction, and questioning traditional journalistic authority with the blurred lines between producers and consumers of news.(Cheriti & Mehiri, 2025, p. 9).

3- Methodology

3-1 Research Design and Sampling Method

This study uses a quantitative comparative content analysis to examine news presentation across five major online journalism platforms: HuffPost, Business Insider, Gizmodo, Mashable, and TMZ. Platforms were selected through purposive sampling based on visitor rates and online influence using data from Semrush and SimilarWeb. A two-tier sampling method was applied, combining purposive selection of platforms with random sampling of 1086 articles from each platform's main page over six months. This approach ensures a representative and unbiased analysis of the platforms' informational strategies (Johnstone, 1989)

Table 01 translates the relationship between two variables; the first is independent, which are the platforms of the study sample, and the second is dependent, which represents the subject of the message (content) and is related to the analytical study sample (1086) posts.

The tabulated units of analysis are the frequencies and percentages of the study community, which embody the type of content that the communicator chooses to publish, except the null values indicated by the symbol (-), which, of course, indicate the absence of political, economic, artistic or social and mixed topics on the Gizmodo platform, as well as the lack of interest of the communicators in the TMZ publications in religious, technological, mixed issues and others.

The general percentages, therefore, indicate the significant increase recorded in the percentage of posts with technological and artistic content, as they reached (36.18%) and (33.13%) respectively, which gives a clear picture of the reality of the message on online journalism platforms and enables us to compare this with the most popular topics in other media outlets in general. The overall variance reached its maximum range from about (0.55%) or (06) posts with mixed content to about (36.18%) or (393) posts with technological content and from zero value (-) or no technological posts on the TMZ platform to (22.92) or (249) posts on Mashable. On average, we find that the size of the presence of technological content is (78.6) posts, followed by artistic content (72), then economic (16.8), and political (16.8).

According to the median value, half of the total posts with technological content are more than (33), while the other half is less than that, and half of the total posts with artistic or political content are more than (27) and (21), respectively, while the other half are less than those two values.

On the other hand, the variance results show a high degree of dispersion in the distribution of technological, economic, and artistic posts, which means that they are less homogeneous than others.

By focusing on a different dimension of the data presented in the table. The general percentages indicate a significant increase in the percentage of reliance on the personal source of the journalist to obtain the material

to be sent on digital press platforms, compared to other sources. This is demonstrated by the majority percentage (98.95%), which indicates the growth of the activity of sending and shaping the message or content by the journalist, in addition to their interest in the journalistic scoop, which means making more efforts to obtain the message or information or create content.

The general disparity in the percentages has reached its maximum, from about (7.73%) or (84) posts on the Business Insider platform to (46.77%) or (508) posts from the Mashable platform that relies on the personal source as a primary reference in the process of publishing news and dealing with media content and its various diverse materials, about the percentage of the personal source to the total number of sources. In contrast, this disparity in the percentage of reliance on other sources of zero value (-) or no personal inclusion in both the Business Insider and TMZ blogs reaches (0.46%) or (05) non-personal inclusions on the Gizmodo platform.

On average, we find that the size of the study sample publications from a personal source is (215) and (2.2) for the average size of publications from other sources. According to the median value, half of the total content publications from personal sources are less than (119), and the other half are more than that value. Also, half of the content publications from other sources are less than their median value (02), while the other half are more than that value. Meanwhile, the variance results show a high degree of dispersion in the distribution of the size of personal content sources from the study sample's vocabulary, which means less homogeneity compared to other sources.

Moving over to the third part of the table, the data reveals the specific types of experiences targeted by online journalism platforms. The tabulated units of analysis reflect the kind of recipient in the communication process via digital press platforms, as the statistical data presents us with the reality of the communicator's interaction with the content of the message according to its recipient (journalists/communicators) target more specialized categories with their publications. The same applies to the general public, whose public life and interests the majority of them fit into the message.

The general variation in the percentages reached its maximum, from about (7.73%) or (84) publications from Business Insider and TMZ to (46.96%) or (510) publications in Mashable targeting a general audience, except the missing values indicated by the symbol (-), which suggests the absence of publications targeting a specific audience in each of Business Insider, Mashable, and Gizmodo. The percentages indicate a significant increase in the rate of journalists publishing general content, reaching (80.91%) or (879) posts. This means broad categories of recipients or users of online journalism platforms are targeted by messages with general content. On average, we find that the number of posts targeting a general audience is 175.8, and according to the value of the median, half of the number of posts targeting a general audience exceeds 96, while the other half exceeds that. On the other hand, the variance results show a high degree of dispersion in the first category, which means there is less homogeneity than its counterpart.

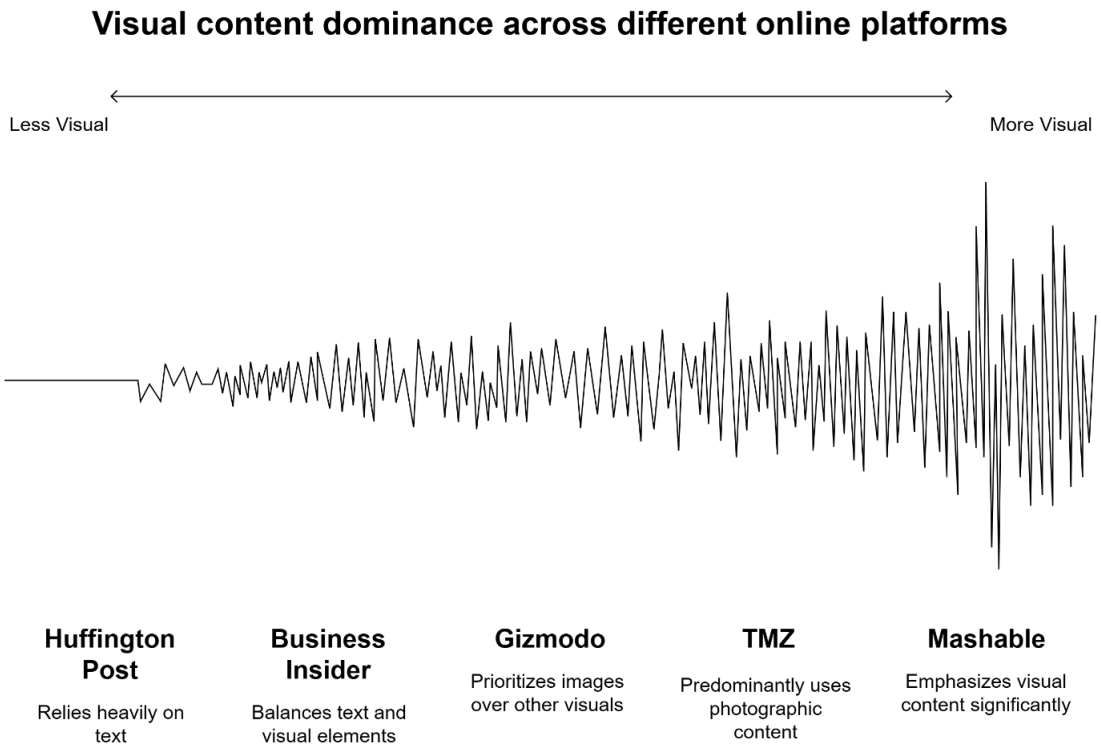


Figure 1

Self-designed Visualization of Prominent Online Journalism Platforms Profile in 2024.

Note. Data sourced from SimilarWeb (2024) and Semrush (2024).

Figure1; indicates the absence of topics in the form of audio or link in the publications of the study sample, which may be due to factors, the most important of which is the emergence of applications and platforms specific to audio and link media that are more effective than digital news platforms. The general percentages, therefore, indicate the significant increase in the demand for "text publishing" and the dominance of what we can call "the authority of electronic text" over other forms. This pattern, represented by the demand for using text in a way that exceeds other media, indicates, first of all, the nature of electronic platforms and the compatibility of the act of making news, whether recorded or written text, where the difference is only between the paper and electronic space, while the act remains the same. Therefore, it is natural for the proportion of text to increase compared to other forms. The overall variance reached its maximum range from about (3.22%) or (35) text posts in Gizmodo to (22.09%) or 240 text posts in Mashable, which is the same for the image medium in both platforms. In comparison, the variance reached its maximum range from about (0.82%) or 09 video posts in Business Insider to (2.76%) or (30) video posts in Mashable.

On average, we find that the size of the text presence in digital press platforms is 97.2 posts, followed by the image (96.8) and then the video (23.2). Depending on the value of the medium, half of the total posts in the text form are more than (50) while the other half are less than that, and half of the total posts in the image or video form are more than (49) and (26) respectively, while the other half are less than those two values. On the other hand, the variance results show a high degree of dispersion in the distribution of text and image posts, which means that they are less homogeneous than others.

A closer examination of the subsequent section of the table reveals notable trends in the shape and type of images utilized, further highlighting their strategic role in tailoring visual content to audience preferences and platform-specific requirements. The analysis units that we dealt with the statistical data reveal to us how journalists employ and use the image medium and the extent of benefit from the applications provided by computer programs for dealing with that medium (Photo editing software) or photographic devices and other means or mechanisms that activate the role of the image medium and help it spread the message, as it is a crucial media container and carrier among other media (text, sound).

However, the null values symbolized by the sign (-) are excluded from this statistical data, which do not indicate percentages, of course, but rather the lack of use by journalists of the animated image with the suffix (gif) or the form of icons that appear more dynamic and interactive than other forms and suffixes of images, as it is considered an element of attraction for the blog reader or visitor, and thus acquires excellent importance in embodying the content of the message, as it may be due to the lack of compatibility of the topic of the post with its embodiment in the form of an animated image, in addition to the lack of interest in the forms in which the contents of the posts and their inclusions are employed, as much as the direct focus on the topic of the post. Still, there will inevitably be great opportunities for Them to enrich the meaning and significance of the message's contents.

The overall variation in the percentages reached its maximum from about (54.05%) or (20) Business Insider posts containing a photograph to (71.42%) or (35) posts in Huffington Post, and from (4.58%) or (11) posts containing designed images to (20) or (07) posts containing designed images, and from about (2.91%) or (07) in Mashable to (32.43%) or (12) posts containing flash images.

On average, we find that the number of photographs is higher than the averages of other forms of pictures in the publications of the digital press platforms in the study sample, as it amounts to (76.6) photographs compared to (9.4) (10.8) for designed photographs and flash photographs, respectively. According to the median value, half of the pictures are less than 35, while the other half exceeds that value. Also, half of the number of different forms of photographs (designed photographs, flash) is less than (08,07), while the other half exceeds that value.

By examining the data on picture size, the table highlights significant preferences in dimensions, shedding light on how platforms prioritize visual clarity and aesthetic appeal. The general percentages indicate a substantial increase in the rate of journalists' focus on including images larger than (300300) pixels, i.e., more than (7.95 x 7.95) cm, as they represent more than half of the size of published images, which means that their area exceeds 63.20 cm2 or (17316.8) cm2 combined, if the frequency of their appearance on the pages of digital press platforms is calculated, which reflects the extent of the richness of the content or message embodied in the image medium on the one hand, and an aspect of professionalism and control over the image as well by modifying its extension, dimensions, and dimensions, Dimensions, Sizes Type on the other hand. The general variation in the percentages reached its maximum extent from zero value (-) or no post in Gizmodo that contained images smaller than (100 x 100) to about (6.19%) or 30 posts in TMZ.

On average, we find that the size of images with more than (300 x 300 pixels) in digital press platforms is higher than the average size for images with (less than 100 x 100 pixels) and (from 100 x 100 to 300 x 300 pixels), where it reaches (54.8) images in the first.

In contrast, it goes (27.4) and (14.6) images in the second and third, respectively. According to the median value, half of the total size of images with (300 x 300 pixels) is less than 35 images, while the other half exceeds that value. In comparison, half of the total size of images with (less than 100 x 100 pixels) and (100 x 100 to 300 x 300 pixels) is less than (06) and (14) images, respectively, while the other half exceeds those two values. At the same time, the variance ratio indicates a high percentage of dispersion in the distribution of individuals in the third category sample, which means that it is less homogeneous than others.

The section of the table dedicated to video duration unveils significant variations in time lengths, underscoring how platforms tailor content to optimize viewer interest and completion rates. The tabulated analysis units reveal the time of video files' inclusion in digital press platforms and the implications of that for the journalist as the video and the image, its duration is linked to the extent of interest and its strength for the

sender in this case; that is, the longer the video, the more it indicates a type of interest of the journalist in the message and vice versa.

The general variation of the percentages reached its maximum from zero value in Business Insider, which was devoid of video files less than a minute, to about (7.75%) or (09) video files in TMZ and from (7.75%) or (09) video files in Business Insider, to (20.68%) or (24) files for the second category (from one minute to 5 minutes).

In addition, the general percentages indicate an increase in the rate of video files ranging from one minute to 5 minutes, reaching (48.25%) of the total number of video files included in digital press platforms. Any double (02) percentage of files less than one minute, which is a suitable time for the nature of the platform on the one hand and the content of the message on the other hand. On average, we find that the period for video files from one minute to 5 minutes reaches 18.6 files. Thus, it is higher than the two remaining periods (less than a minute) and (more than 5 minutes), as their averages reach (4.40) and not a minute (-) respectively, and according to the value of the median, half of the total period for video files ranging between one minute and 5 minutes is less than 19 files, while the other half exceeds this value, while half of the total period for video files (less than a minute) and (more than 5 minutes) is less than (05) and not a minute (-) respectively, while the other half exceeds that value.

The variance results also clearly indicate a high percentage of dispersion in the second category's vocabulary distribution, which means less homogeneity.

Discussion

This section examines how the research findings connect online journalism content to AI. It explains how the findings apply to discussions of current online journalism platforms and how to address AI shortcomings while preserving the principles of objectivity and fairness in reporting.

Characteristics of Content in Online journalism Platforms

This research contributes helpful insights regarding the key quality elements of content in online journalism, focusing on the users and the interaction with the content. It is imperative that we expand our understanding of three vital categories of content generalizations that foster user interaction in the digital realm: The most aspects of usability are; reach and accessibility, interactivity and customization/personalization. For real change, however, content has to be findable and consumable. (Avgousti and Papaioannou2023). The content must have a large audience, as well as engage both the new viewers and those who earlier may not have shown much interest. These are quite useful on several platforms, which eventually raises the post's reach and exposure. In turn, when the users observe active participation of their companions, their interest is piqued, and they follow the example of their friends. (Ijomah et al.2024). By focusing on these aspects, the online journalism platforms will be able to better the objectives and functioning thus actively contributing to the online journalism practice. A research shows that the online journalism tool might help increase readership loyalty while actively engaging readers. The addition of such elements, as polls, quizzes and multimedia is effective to increase users' activity. Analysis of prior studies shows that it is beneficial to promote tailored content to the audience in order to increase satisfaction and user retention.(Zayani, 2021)

As our study indicates, while the image plays a significant role in conveying the message, it complements the text, which remains the primary vessel for communication (Cheriti & Mehiri, 2025, p. 17), but some studies have proven that the text is superior to the image element in conveying the message, followed by the video element, not only through the sending activity but also through the activities of liking, commenting and re-sharing, where online journalism users interact with the image more (Kim & Yang,2017). The content material or the message format in the communication process is of great importance, as it feeds the latter and ensures its formation and continuity. Although the nature of the message is the nature of the medium itself, we notice a kind of difference or incompatibility -online journalism platform sample- in the use of message formats,

According to our findings, technological and artistic content are the most prominent across the online journalism platforms in that they take the largest part of the posts. Overall, technological posts were the most common and the next were those containing artistic content. These results are in line with the general increase

in hypertextuality and interactivity towards the consumption of news reported by Villagómez-Rodríguez (2023). This multimedia approach enhances the user experience, in tandem with the increasing mixture of informative, entertaining, and visually stimulating content that characterizes online journalism, addressing a wider audience and encouraging an active news environment (Wunderlich et al., 2022).

Research in communications has explored the direct and media effects of reach in more traditional mass media contexts. Content also needs to be accessible through interfaces or technologies that the audience can use, an idea that moves from one of the key functional criteria for the quality of content, in terms of standard gates to interaction and motivation (Onyejelem & Aondover, 2024). Interactivity is not a keyword but a reflection of the fact that meaningful engagement is an effective way of enriching content. In other words, interactivity may be defined as a set of interactions that result in a transfer of knowledge for at least one party. The more often people engage with one other, the more pronounced the possibility of learning and change. Part of this, which is also particularly impactful in terms of interactivity is what we can describe as participative experiences, that is, the integration of physical capabilities into digital platforms. Moreover, personalization is extremely important in the sense that it enables the creation of personalized content according the specific preferences of different consumers (Wang, 2021). Efforts towards personalization are motivated by consumer interests in both enjoyment and practical benefits. Ultimately the satisfaction that results in individual participation is crucial to the production of a content - as a good - which may be seen as high quality entertainment. By adopting these principles, not only will online journalism platfomrs boost the usability of its content for the user but the content's standard will boost the overall standard too.

Text

The study shows that text content is the most significant type of content on the digital news, which represent the high importance of the text as a media type. The lack of the audio or link post suggests the emergence of other digital environments for these formats. In details, the same study reveals that there is a variation in the number of text, image and video posts made on the different platforms and that most of the posts made are in the form of texts. This pattern underlines the fit of text to the digital environment and the general tendency of news to be produced in textual format. Methods for big data analysis on text data especially in the fast evolving domain of online journalism are being developed rapidly. Nevertheless, in terms of quantitative analysis of the presence of sensitive content in television journalism, quite a few obstacles persist, particularly, the challenges of massive transcription of spoken language. It also lead to the understanding that it is time to develop insights for the newer bigger fields of our traditional media while at the same time underlining the possitive potential for improving our current online journalism with the help of new approaches (de-Lima-Santos et al., 2024)

The use of text in online journalism has taken centre stage in the current society where media consumption is continuously changing. In the course of the advancement of technology in the dissemination and receipt of information, text has been a key component of the new age (Bell et al., 2017). In the same way, Kozhakhmetova et al. (2020) stated that media texts are coheres and integrated messages that can portray social phenomena and can be considered as an actual manifestation of the communication process. Previous works are in agreement with the present study and emphasize the role of the online journalism platforms analyzed in this study, especially when using text as the main content component.

Image

The point of view of the communicator in the media may be clarified in the textthrough some techniques such as editing decisions, hint words, images, .. . (Cheriti, 2024, p. 913)

AlsoJournalists and designers in textual and online journalism organizations use photographs, infographics, and illustrations, among other media, to provide visual storytelling support or add extra relevance or layers of information (Hamza2023). A photograph can make news on its own, a diagram can complement an explanatory article, and an illustration can be the main vector for the cover of a digital magazine.

In this study, we discover that images are intentionally employed by journalists to improve the message they are conveying, and that they have a higher affinity for photographs as opposed to other forms of images such as animated or designed ones. The lack of some image formats, including GIFs and icons, also indicates a

narrow scope of a wider range of image materials. Furthermore, the trend towards bigger images is observed which may indicate the users' interest in clear and business-like image display. The data also presents a clear pattern of differences in image types and sizes, suggesting different methods of handling visual materials. It is crucial to turn to online journalism and pay special attention to the visual elements of images and their important position on the top of the headlines of most news articles. This is an opportunity to learn and appreciate how images influence the perception of news in great detail. (Bengtsson & Johansson, 2021) .

But with this increased focus on images, the detractors of this visual-dominant paradigm opine that visuals carry with it a danger of shallowing out textual density. They argue that overdependence on imagery may create the risk of distorting several issues by quantifying them since images can easily be given different meanings and can imply the complication of all the cases than required. (Huxford, 2023).

In addition, some scholars also remark on how possibly the visual content could propagate gender biases and stereotypes, because online images tend widely to highlight and intensify already existing biases in the society. (Guilbeault et al., 2024). Overall, we can say that whether images play a dominant role in newsprint or hyperlinked online journalism is a deeply matter of opinion.

Video

We find that video durations vary considerably, a reflection of how platforms adjust content to optimize viewership and completion rates. Data indicate that, on average, longer videos usually mean more interest in a message by journalists, but shorter videos are more common – especially in categories ranging from 1 to 5 minutes. Nearly half of all video content falls within this timeframe, making this suitable for both platform freeforms and message delivery. An extensive survey indicates that audiences prefer to watch a video over a online journalism, blog post or an infographic. The same survey predicted that by 2021 video will comprise 82 percent of consumer internet traffic. Journalists just need information to make those editorial choices. That's what metrics provide. To summarize, this evidence shows that video is necessary to increase emotional responses and to reinforce a message in the form of recall and information retention (Zhou et al. 2021).

There is a discussion regarding the nature of text and video in online journalism in the age of the digital revolution. Video has become popular due to the development in video technologies, the increased usage of mobile gadgets, social networking sites. In his study of video journalism, Bock et al. (2023) argue that video journalism is a social and material practice , reshaping the relationship between the journalist and the source (Bock, 2011).

The use of video in online journalism has faced some challenges that include; Resource constraints, Short term focus, and Lack of leadership and training. These factors lead to creation of low-quality videos which do not utilise the video as a medium to its full potential (Kalogeropoulos & Nielsen, 2017; Bock et al., 2023). Moreover, the length of video in online journalism is still unclear, as current research investigates whether news videos are shifting or staying consistent with traditional media habits.

Audience

Furthermore, the findings reveal the increased focus on the targeting of particular and, more so, general audiences with the total number of publications directed to the general public experiencing the most robust growth. Amidst this constantly evolving digital media trend in journalism, the beauty of the written word is seen grossing the audience of the contemporary journalism; when the way of delivering an information has altered completely, the word has to be used tactfully so the reader in the virtuality of digital news feels it and connects with it.

It was pointed out in the seminal research on the "platform press," technology firms control the attention and advertising spaces; therefore, news organisations continue to reshape the structure as well as the mechanisms to fit into this new tech-world. (Bell et al., 2017). Given this perspective, the written content has become perhaps the central point of competitive advantage, since audiences expect to find interesting, insightful, and visually appealing stories in their informational consumption space. Further (Mishra, 2017) the study reveals that interest management has become a major worry for media organizations given that the

readers are now presented with lots of opportunities hence the targeting of both specific and broad audiences for a conducive online journalism platform presence.

Responding to AI Challenges in Online journalism

AI, especially through machine or algorithm-assisted methods, is revolutionizing the landscape of online journalism and deserves our full attention. The benefits are undeniable as it becomes an integral part of how news is produced, curated, personalized, and consumed. Journalists and news organizations or platforms are harnessing a multitude of AI tools to streamline various processes in news production and distribution (Onyejelem & Aondover, 2024). These tools are used in content creation, data analysis, news-worthiness determination, package news for users, engaging audience and manage comments among other functions. It's not a question of whether online journalism platforms should adopt AI or not; it is a requirement for surviving in today's dynamic world of journalism. AI can assist journalists in getting a clearer picture of what is going on in the world in less time than it would take a human to do so, as well as identifying patterns and trends in the data that are not always apparent to human journalists and which they may choose to ignore. In this context, the maximum accuracy within the shortest time possible seems to be deemed more important than the maximum level of disclosure. (Jamil, 2021).

The lack of content variety is a main deficiency in our study sample of online journalism platforms. For instance, the spectrum of topics and related involvement of readers decreases based on absence of the political, economic and social publications and entries. However, as it is, TMZ provides a minimal attention to such important topics as technology and religion. In order to fill these gaps, we could create content using AI to diversify. AI driven recommendation systems could mine on user preferences and recommend topics that were under represented such as politics and economics. Natural language processing (NLP) algorithms could also search for content holes and create material during missing areas such as reach and engagement across platforms.

Furthermore it is quite evident that computer generated writing poses no risk and that in the context of content writing, AI has no advantage in choosing between options. But, the negative information about such events may contribute to the long-term changes of readers confidence. These events could also raise questions regarding how artificial intelligence might be utilized in more indirect ways to control. AI is not capable of identifying and understanding data as effectively as a human being does (Dong et al., 2020). Such could result in unfairness based on liability or even undue discrimination.

Conversely, our study reveals the major shortcomings in online journalism platforms, the most significant of which, in our perspective, is the extreme dependence on individual sources to produce the content; that is to say, the journalist's individual work of acquiring the news and monitoring its contents. This reality, while reaffirming the need for journalistic independence and displaying his personal effort, in turn exposes the narrow range of views and sources.Here in this context, the overwhelming importance of personal sources might inadvertently strengthen bias, restrict the range of content and, narrow the range of perspectives on the opposite side of the news story. This implies that such an approach to sourcing can create an echo chamber effect, where certain common narratives are being reinforced, causing the platform and the depth of its news coverage to lose credibility in the eyes of its readership.

As for this problem, AI presents a potential in increasing content range by using the automated systems that collect and analyze more diverse number of opinions. Conventional information technologies in the form of recommender systems and natural language processing can help determine which topics have been left uncovered and what additional sources, opinions of industry professionals, or other forms of data might be useful. By adopting the use of machine learning analysis in media outlets, journals, and social media, digital press platforms will be able to expand their database and feed the public a more diverse and inclusive view of the events.

Furthermore, the challenges posed by online journalism, including the need for enhanced digital literacy among journalists and audiences alike, are critical for navigating the complexities of the digital information landscape. we argues that while digital journalsim offers new engagement opportunities, it also demands a higher level of statistical and digital literacy from journalists to effectively utilize data journalism techniques.

This necessity for continuous learning and adaptation underscores the evolving nature of journalism in the AI age.

Conclusion

This study has drawn attention to the emerging dynamism on how online journalism operates, with a markedly preference for text-based articles and images, alongside videos to make content more accessible, appealing, and effective. Interactive and personalization factors increase audience engagement but lack of content richness variety and excessive use of self-sources may hinder equal representation. The findings highlight the requirement to solve these issues through AI-enabling the generation of content, advanced data analysis, and individual experience. In order to reinforce thematic offerings on online journalism platforms, the publication of this research suggests a reorientation towards utilizing AI to detect underserved subjects and producing corresponding content. More interactivity by adding dynamic features with multimedia can also make online journalism platforms interesting to the audience. These strategies can help online journalism platforms continue to function, maintain their relevance and standing among other media outlets, and reach a more and broader audience. Thus, they can ultimately ensure their existence in the competitive and rapidly changing digital space.

Limitations and Future Directions

Limitations of the study include the small sample of online journalism platforms as well as our lack of focus on the level of audience engagement and participation. Future research should explore the role of AI in content diversification, its impact on journalistic practices, and its ethical implications.

Conflict of Interest

The authors declare no conflict of interest. All observations, interpretations, and recommendations presented in this article are based on professional experience and research conducted independently.

References

1. Ambadas, B. (2024). Emerging Trends in Online journalism: A Comprehensive Review. International Journal for Multidisciplinary Research, 6(2)https://doi.org/10.36948/ijfmr.2024.v06i02.16904
2. Avgousti, A., & Papaioannou, G. (2023). The current state and challenges in democratizing small museums' collections online. Information Technology and Libraries, 42(1).https://doi.org/10.6017/ital.v42i1.14099
3. Bell, E., Owen, T., Brown, P. D., Hauka, C., & Rashidian, N. (2017). The platform press: how Silicon Valley reengineered journalism. https://doi.org/10.7916/d8r216zz
4. Bengtsson, S., Johansson, S. (2021) A phenomenology of news: Understanding news in digital culture Journalism - Theory, Practice & Criticism, 22(11): 2873-2889 https://doi.org/10.1177/1464884919901194
5. Bock, M. A. (2011). You Really, Truly, Have to "Be There": Video Journalism as a Social and Material Construction. In Journalism & Mass Communication Quarterly (Vol. 88, Issue 4, p. 705). SAGE Publishing. https://doi.org/10.1177/107769901108800402
6. Bock, M. A., Richardson, R., Assaf, C. T., & Tsyrenzhapova, D. (2023). Improvisation, Economy, and MTV Moves: Online News and Video Production Style. In Electronic News (Vol. 17, Issue 3, p. 146). SAGE Publishing. https://doi.org/10.1177/19312431231157104
7. Cheriti, F. (2024). Breaking the gate: Gender dynamics in digital media contributions – A content analysis study. Psychology and Education, 61(12), 908–930. https://www.researchgate.net/publication/387054093_Breaking_the_Gate_Gender_Dynamics_in_Digital_Media_Contributions_A_Content_Analysis_Study
8. Cheriti, F., & Mehiri, D. (2025). Pertinence ou déclin : Impact du journalisme numérique sur la production médiatique face aux défis de l'IA [Holding ground or losing relevance: A comparative content analysis of how digital journalism platforms shape news content in response to AI challenges]. Ziglôbitha, Revue des Arts, Linguistique, Littérature & Civilisations, RA2LC(13), Vol. 2. https://doi.org/10.60632/ziglobitha.n013.01.vol.2.2025
9. de Lima Santos, M. F., Yeung, W. N., & Dodds, T. (2024). Guiding the way: A comprehensive examination of AI guidelines in global media. *AI & Society*. https://doi.org/10.1007/s00146-024-01973-5

10. Dong, X., Yu, Z., Cao, W., Shi, Y., & Ma, Q. (2019). A survey on ensemble learning. Frontiers of Computer Science, 14(2), 241-258. https://doi.org/10.1007/s11704-019-8208-z
11. Felix, Lee., Eddie, Yu. (2024). 2. Disruptive Innovation in China's Primary Healthcare Market: A Case Study of a Startup to Challenge Incumbent and Business Growth Sustainability. Journal of business and management studies, https://doi.org/10.32996/jbms.2024.6.3.7
12. Goldberg, B., Acosta-Navas, D., Bakker, M., Beacock, I., Botvinick, M., Buch, P., DiResta, R., Donthi, N., Fast, N., Iyer, R., Jalan, Z., Konya, A., Danciu, G. K., Landemore, H., Marwick, A., Miller, C., Ovadya, A., Saltz, E., Schirch, L., ... Tessler, M. H. (2024). AI and the future of digital public squares. arXiv. https://doi.org/10.48550/arXiv.2412.09988
13. Gravino, P., Servedio, V. D. P., & Tria, F. (2024). Human vs. generative AI in content creation competition: Symbiosis or conflict? .https://doi.org/10.48550/arXiv.2402.15467
14. Guilbeault, D., Delecourt, S., Hull, T., Desikan, B. S., Chu, M., & Nadler, E. O. (2024). Online images amplify gender bias. In Nature (Vol. 626, Issue 8001, p. 1049). Nature Portfolio. https://doi.org/10.1038/s41586-024-07068-x
15. Hamza, A. (2023). The importance of using infographics in field of journalism. Journal El-Baheth in Human and Social Sciences Volume14-Number, 123. cerist.dz
16. Huxford, J. (2015). Visual images in the media. In *International Encyclopedia of the Social & Behavioral Sciences* (2nd ed., pp. 401-406). Elsevier.https://doi.org/10.1016/B978-0-08-097086-8.95041-4
17. Ijomah, T. I., Idemudia, C., Eyo-Udo, N. L., & Anjorin, K. F. (2024). Innovative digital marketing strategies for SMEs: Driving competitive advantage and sustainable growth. International Journal of Management & Entrepreneurship Research, 6(7), 2173-2188.https://doi.org/10.51594/ijmer.v6i7.1265
18. Najafov, R. (2025). Socio-psychological determinants of value development in students: A meta-analytical review of ne-gative behaviors and the educational-social dynamic. *Revista Mexicana de Investigación e Intervención Educativa*, 4(3), 275-289
19. Jamil, S. (2020). Artificial intelligence and journalistic practice: The crossroads of obstacles and opportunities for the Pakistani journalists. Journalism Practice, 15(1), 1-23. https://doi.org/10.1080/17512786.2020.1788412
20. Jenkins, H. (2006). *Confronting the challenges of participatory culture: Media education for the 21st century (Part 2)*. MacArthur Foundation. https://doi.org/10.7551/mitpress/8435.001.0001
21. Johnstone, D. (1989). On the Necessity for Random Sampling. The British Journal for the Philosophy of Science, 40, 443 - 457. https://doi.org/10.1093/bjps/40.4.443.
22. Kalogeropoulos, A., & Nielsen, R. K. (2017). Investing in Online Video News. In Journalism Studies (Vol. 19, Issue 15, p. 2207). Routledge. https://doi.org/10.1080/1461670x.2017.1331709
23. Karoline, Andrea, Ihlebæk. (2017). Participatory Culture in a Networked Era. Information, Communication & Society, 21(12):1801-1802. doi: 10.1080/1369118X.2017.1417462
24. Kim, C., & Yang, S. (2017). Like, comment, and share on Facebook: How each behavior differs from the other. Public Relations Review, 43(2), 441-449. https://doi.org/10.1016/j.pubrev.2017.02.006
25. Kozhakhmetova, A., Оспанова, Ж., Mussatayeva, M. Sh., & Bissenbayeva, Z. (2020). Axiological concepts of journalistic texts (lingua- stylistic analysis). In XLinguae (Vol. 13, Issue 2, p. 225). https://doi.org/10.18355/xl.2020.13.02.19
26. Langton, L. M., de Uriarte, M. L., Grinfeder, K., & Vicente, P. N. (2021). New technology, new rules for journalism and a new world of engagement. https://doi.org/10.48550/arXiv.2104.08592
27. McCombs, M. E., & Shaw, D. L. (1972). The Agenda-Setting Function of Mass Media. The Public Opinion Quarterly, 36(2), 176–187. http://www.jstor.org/stable/2747787
28. Mireia, Fernández-Ardèvol., Ramon, Ribera-Fumaz. (2022). 6. The Network Society Today. American Behavioral Scientist, doi: 10.1177/00027642221092800
29. Mishra, K. D. (2017). Social media revolution - The new digital frontiers of Journalism. In JOURNAL OF ADVANCES IN HUMANITIES (Vol. 5, Issue 1, p. 610). https://doi.org/10.24297/jah.v5i1.6068
30. Onyejelem, T. E., & Aondover, E. M. (2024). Digital generative multimedia tool theory (DGMTT): A theoretical postulation. Journalism and Mass Communication, 14(3), 189-204. https://doi.org/10.17265/2160-6579/2024.03.004
31. Pavlik, J. V. (2001). Journalism and New Media. https://doi.org/10.7312/pavl11482
32. Safran, Safar, Almakaty. (2024). 1. Agenda Setting Theory in The Age of Digital Media: An Analytical Perspective. Evolutionary studies in imaginative culture, doi: 10.70082/esiculture.vi.1539
33. Garajamirli N. (2025). Framing the long arc: modeling media influence from civil rights journalism to digital activism. (2025). *Lex Localis - Journal of Local Self-Government*, 23(10), 497-520.

34. SEMrush. (2024). Digital marketing insights and competitive research tools. *SEMrush.* Retrieved from https://www.semrush.com/
35. SimilarWeb. (2024). Website traffic and audience insights for online journalism platforms. *SimilarWeb.* Retrieved from https://www.similarweb.com
36. Villagómez-Rodríguez, P. (2021). Advertising and sustainability in Ecuadorian digital media: La Posta. *Atlantis Press*. https://doi.org/10.2991/assehr.k.210902.004
37. Waisbord, S. (2019). The 5Ws and 1H of Online journalism. In Online journalism (Vol. 7, Issue 3, p. 351). Taylor & Francis. https://doi.org/10.1080/21670811.2018.1545592
38. Wang, C. L. (2021). New frontiers and future directions in interactive marketing: Inaugural editorial. Journal of Research in Interactive Marketing, 15(1), 1-9. https://doi.org/10.1108/JRIM-03-2021-270
39. Witschge, T., Anderson, C. W., Domingo, D., & Hermida, A. (Eds.). (2016). The SAGE handbook of online journalism. SAGE Publications. https://doi.org/10.4135/9781473957909
40. Wunderlich, D., & et al. (2022). What feels like news? Young people's perceptions of news content on social media platforms. Media, Culture & Society, 44(1), 24-41. https://doi.org/10.1177/14648849231212737
41. Zayani, M. (2020). Online journalism, social media platforms, and audience engagement: The case of AJ+. *Online journalism, 8*(1), 24-41. https://doi.org/10.1080/21670811.2020.1816140
42. Zhou, M., Chen, G. H., Ferreira, P., & Smith, M. D. (2021). Consumer behavior in the online classroom: Using video analytics and machine learning to understand the consumption of video courseware. Journal of Marketing Research, 58(6), 1079-1100. ssrn.com

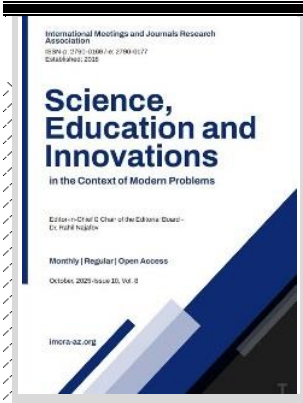
Sci. Educ. Innov. Context Mod. Probl.| ISSN p (e): 27900169; 27900177

Table 1

The Nature and Source of Content in Online Journalism Platforms:

Platforms	Political	Sports	Economic	Religious	Artistic	Technological	Social	Mixed	Total	Personal Sources	Other Sources	General audience	Specialized audience
Huffington Post	36 (3.31%)	09 (0.82%)	09 (0.82%)	06 (0.55%)	27 (2.48%)	12 (1.10%)	18 (1.65%)	06 (0.55%)	123	119 (10.95%)	04 (0.36%)	105 9.66	18 1.65
TMZ	03 (0.27%)	12 (1.10%)	03 (0.27%)	-	234 (21.54%)	06 (0.55%)	15 (1.38%)	-	273	273 (25.13%)	-	84 7.73	189 17.40
Business Insider	21 (1.93%)	09 (0.82%)	06 (0.55%)	03 (0.27%)	06 (0.55%)	33 (3.03%)	06 (0.55%)	-	84	84 (7.73%)	-	84 7.73	-
Mashable	24 (2.20%)	42 (3.86%)	75 (6.90%)	09 (0.82%)	93 (8.56%)	249 (22.92%)	18 (1.65%)	-	510	508 (46.77%)	02 (0.18%)	510 46.96	-
Gizmodo	-	03 (0.27%)	-	-	-	93 (8.56%)	-	-	96	91 (8.37%)	05 (0.46%)	96 8.83	-
Total	84 (7.71%)	75 (6.33%)	93 (8.54%)	18 (1.64%)	360 (33.13%)	393 (36.18%)	57 (5.24%)	06 (0.55%)	1086	1075 (98.95%)	11 (1.00%)	879 80.91	207 19.05

Note: This table illustrates the distribution of content types and sources across selected digital platforms. Categories include political, economic, technological, and social content, with percentages reflecting each platform's contribution. Personal and other sources of content are also detailed for comparison. Additionally, a column is included to highlight the targeted audience for each platform, distinguishing between general and specialized audiences.



Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of Research Article

The Philosophy of Revolution in Karl Marx: Historical Materialism, Class Struggle, and the "*Transformation from Capitalism to Socialism*"

Douza Mouna

Dr.
Laboratory of Research in Literary, Linguistic, Educational and Translation, University of Mohammed Seddik Ben Yahia, Jijel
Algeria, Cheriti.
E-mail: mouna.douza@univ-jijel.com

Issue web link	https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html
Keywords	Karl Marx; Revolution; Capitalism; Socialism; Historical Materialism; Class Struggle.

Abstract

The nineteenth century was marked by profound social and political upheavals that reshaped the European intellectual and economic landscape. The revolutionary wave of 1848, initially framed as a democratic struggle, rapidly escalated into a confrontation between antagonistic social forces: workers and capitalists, liberals and socialists, conservatives and reformists. Within this historical conjuncture, and alongside the Industrial Revolution, Karl Marx formulated a philosophy of revolution grounded in historical materialism. He argued that history is governed by objective social laws—laws which, independent of individual will, propel society toward transformation. Central to his thought is the theory of class struggle, where society increasingly polarizes into two irreconcilable camps: the bourgeoisie and the proletariat.

This study revisits Marx's conceptualization of revolution as both a historical necessity and a scientific interpretation of social change. By analyzing the interplay of capitalism and socialism within Marx's framework, it underscores how proletarian uprisings emerge not as accidental events but as structurally determined outcomes of capitalist contradictions. The paper concludes that Marx's philosophy of revolution continues to resonate in contemporary debates on social justice, inequality, and systemic transformation.

Citation. Douza M. (2025). The Philosophy of Revolution in Karl Marx: Historical Materialism, Class Struggle, and the Transformation from Capitalism to Socialism. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 587–591. https://doi.org/10.56352/sei/8.11.46

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 11.01.2025	Accepted: 01.07.2025	Published: 07.09.2025 (available online)

Actuality of the Study

The contemporary relevance of Karl Marx's philosophy of revolution extends far beyond its nineteenth-century origins. In an era characterized by widening social inequalities, recurring economic crises, and global debates

on labor precarity, Marx's analytical framework provides enduring insights into the structural contradictions of capitalism. His emphasis on the inevitability of class struggle as a catalyst for societal transformation remains pertinent in analyzing both historical and modern revolutionary movements. Moreover, the transition from capitalism to socialism—conceptualized as a radical restructuring of economic and social relations—continues to inform political theory, critical sociology, and debates on post-capitalist futures. The study thus contributes to current academic and intellectual discourses by situating Marx's revolutionary thought within ongoing global challenges.

Introduction

Karl Marx was not mistaken in declaring that "revolutions are the locomotives of history." Human history is, in many respects, a history of revolutions. Revolutions have consistently dissolved outdated systems and propelled progress, fostering new social, economic, and political structures. Within the theory of historical materialism, humanity continuously reshapes itself through contradictions across historical stages (Marx, 1859/1977).

Marx drew upon French socialist traditions to frame society as being in perpetual crisis, where the oppressed strive to dismantle the chains of domination (Engels, 1845/1975). For Marx, humanity's enduring task is revolution: "Society as a whole is splitting into two great hostile camps, directly confronting each other: Bourgeoisie and Proletariat" (Marx & Engels, 1848/2012, p. 14). This study explores Marx's philosophy of revolution by analyzing the dialectical struggle between capitalism and socialism as interpreted through historical materialism.

1. From *Capitalism to Socialism*

The seventeenth and eighteenth centuries were marked by social revolutions across Europe. Capitalism flourished in Europe's emerging cities, as a robust bourgeoisie challenged feudal structures. The English Revolution of the seventeenth century inaugurated this process, but the French Revolution (1789–1792) delivered the decisive blow to the ancien régime by executing the royal family, abolishing aristocratic privileges, and dismantling feudal constraints (Hobsbawm, 1962).

In the nineteenth century, Europe again experienced profound upheavals. The 1848 revolutions began as democratic movements but devolved into fierce conflicts between workers and capitalists, liberals and socialists, revolutionaries and reformists (Draper, 1977). Political tensions reflected the clash between the conservative bourgeois state and reformist aspirations.

Europe's transition from commercial to industrial capitalism, spurred by the Industrial Revolution, expanded the working class and fostered revolutionary consciousness. Marx (1867/1990) argued that this process made proletarian victory inevitable—rooted not in subjective will but in objective social laws. Capitalism, he contended, was structurally unsustainable, as its exploitative relations of production intensified class antagonism.

The bourgeoisie—owners of the means of production—historically dissolved feudal bonds and transformed global society. Yet, as Marx and Engels (1848/2012) observed, this transformation reduced social relations to "callous cash payment," stripping them of spiritual and moral meaning. In its pursuit of profit, capitalism commodified labor, alienated workers, and created the conditions for its own overthrow (Marx, 1844/1970).

Capitalist economists, according to Marx, obscured the contradictions of the system. However, these contradictions compelled the bourgeoisie to rely upon the proletariat, arming the very class destined to become its "gravedigger" (Marx & Engels, 1848/2012). For Marx, the proletariat alone was capable of revolutionary transformation, as all other classes decayed before the advance of large-scale industry (Lenin, 1917/1964).

2. Socialism and Its Revolutionary Doctrine

Socialism arose as both critique and alternative to capitalism. Though antecedents can be traced to antiquity and medieval thought, modern socialism crystallized in response to industrial capitalism's exploitation (Cole,

1954). Defined broadly, socialism entails public ownership of the means of production to prevent worker exploitation (Schumpeter, 1942/2008).

For Marx, socialism was not merely a moral ideal but a historical necessity. He emphasized that the proletariat, lacking property and compelled to sell its labor, could emancipate itself only by abolishing private ownership of the means of production (Marx, 1867/1990). In the *Communist Manifesto*, he declared that "society as a whole is more and more splitting up into two great hostile camps" (Marx & Engels, 1848/2012, p. 14).

Socialist revolution, therefore, required the proletariat to seize political power, centralize the means of production, and reorganize society on a collective basis (Marx, 1875/1970). Unlike reforms that merely adjusted existing structures, revolution sought the radical overthrow of bourgeois supremacy and the construction of a new social order (Luxemburg, 1906/1971).

Marx insisted that revolution was not a mere political event but a material process born of contradictions between productive forces and production relations. Social revolutions erupted when outdated relations constrained the development of new productive capacities (Marx, 1859/1977). Thus, the task of revolutionaries was to seize state power—the "central question of every revolution"—to dismantle the bourgeois state and establish a proletarian state (Lenin, 1917/1964).

For Marxists, this transitional phase represented the "dictatorship of the proletariat," a necessary stage in moving toward communism, where class antagonisms would dissolve and human freedom would be realized (Marx, 1875/1970). In this vision, socialism and democracy were inseparable: genuine democracy could not exist so long as economic exploitation persisted (Engels, 1891/1972).

The Contemporary Worldview of Marxism

While Marx wrote in the nineteenth century, his philosophy of revolution remains highly relevant in the twenty-first century. Today's globalized capitalism has intensified many contradictions Marx identified, while also producing new forms of exploitation and inequality.

- **Economic Inequality and Global Capitalism.** The gap between rich and poor has widened dramatically, with the top 1% controlling more wealth than the rest of humanity (Piketty, 2014). Marx's critique of capital accumulation and concentration resonates in debates on neoliberalism and global financial crises (Harvey, 2010).
- **Precarious Labor and Digital Capitalism.** The rise of platform economies (Uber, Amazon, Deliveroo) and artificial intelligence has created new forms of precarious employment—gig work, algorithmic control, and surveillance capitalism (Zuboff, 2019). These dynamics echo Marx's analysis of alienated labor, updated for the digital age.
- **Ecological Crisis.** Environmental degradation and climate change highlight capitalism's destructive relation to nature. Scholars have reinterpreted Marx's notion of the "metabolic rift" to explain how capitalist production disrupts ecological balance (Foster, 2000). Here, Marxist ecology provides insights into sustainable alternatives to profit-driven exploitation.
- **Global South and Postcolonial Marxism.** Marx's framework has been adapted to analyze imperialism, dependency, and uneven development in the Global South (Amin, 1976). Contemporary movements link anti-capitalist critique to struggles against neo-colonialism, racial capitalism, and global inequality.
- **Social Movements and Revolutionary Praxis.** From Occupy Wall Street to global climate strikes, Marxism informs critiques of systemic power structures while inspiring collective struggles for justice. While classical proletarian revolutions are rare today, Marxism's emphasis on structural contradictions and collective emancipation continues to inspire resistance.

Thus, Marxism endures not as a closed doctrine but as a living tradition, constantly reinterpreted to address the evolving contradictions of capitalism in contemporary society.

Conclusion

Karl Marx's philosophy of revolution rests upon the principles of historical materialism and class struggle. He argued that capitalism, while historically progressive in its dismantling of feudalism, inevitably creates conditions for its own demise. The proletariat, as the only truly revolutionary class, carries the task of abolishing exploitation and inaugurating a socialist society. Marx's critique of capitalism—alienation, exploitation, and accumulation—remains a cornerstone for understanding systemic inequality and envisioning emancipatory alternatives in modern times.

Karl Marx was instrumental in shaping the philosophy of history and articulating a revolutionary framework that rejected exploitative class systems while envisioning a society grounded in justice and equality. He dismantled deterministic narratives that deprived the working class of its transformative agency, instead emphasizing the centrality of class struggle as the driving force of historical change. His philosophy inspired generations to envision socialist and communist alternatives to capitalism, reshaping intellectual and political discourse across the modern world.

For Marx, revolution is not merely a political event but a profound social movement—an intentional, organized transformation of society that seeks to restructure economic, political, and cultural foundations. Through the dialectics of historical materialism, contradictions between the forces and relations of production become sites of conflict, culminating in systemic rupture. In this sense, history is a history of class struggles, where the transfer of state power from one class to another is both inevitable and necessary.

Whenever injustice, tyranny, and systemic corruption prevail, revolution becomes an urgent necessity. The proletarian struggle, born from the contradictions of capitalism, represents both a critique and a transformative force, capable of redrawing society's balance of power. By mobilizing collective agency, mass uprisings challenge entrenched systems of domination, forging new paradigms of social organization.

In the twenty-first century, Marx's vision continues to resonate in debates on global inequality, labor precarity, ecological crisis, and democratic struggles. His revolutionary philosophy remains a living framework—one that interprets systemic contradictions while offering pathways toward emancipation and solidarity. The legacy of Marx's thought lies not only in diagnosing the flaws of capitalism but in illuminating the possibility of a new socialist vision where human freedom and equality prevail.

Acknowledgment

The author expresses sincere gratitude to colleagues from the Laboratory of Research in Literary, Linguistic, Educational and Translation, University of Mohammed Seddik Ben Yahia, for their constructive feedback and support during the preparation of this manuscript.

Conflict of Interest

The author declares no conflict of interest related to the publication of this article.

References

1. Engels, F. (1845/1975). *The condition of the working class in England*. Moscow: Progress Publishers.
2. Engels, F. (1891/1972). *Critique of the draft social-democratic program of 1891*. In K. Marx & F. Engels, *Selected works* (Vol. 3). Moscow: Progress Publishers.
3. Hobsbawm, E. J. (1962). *The age of revolution: 1789–1848*. Vintage.
4. Lenin, V. I. (1917/1964). *State and revolution*. Moscow: Progress Publishers.
5. Luxemburg, R. (1906/1971). *The mass strike, the political party, and the trade unions*. New York: Harper & Row.

6. Marx, K. (1844/1970). *Economic and philosophical manuscripts of 1844*. Moscow: Progress Publishers.
7. Marx, K. (1859/1977). *A contribution to the critique of political economy*. Moscow: Progress Publishers.
8. Marx, K. (1867/1990). *Capital: A critique of political economy* (Vol. 1). London: Penguin.
9. Marx, K. (1875/1970). *Critique of the Gotha programme*. Moscow: Progress Publishers.
10. Marx, K., & Engels, F. (1848/2012). *The Communist Manifesto*. New Haven: Yale University Press.
11. Schumpeter, J. A. (1942/2008). *Capitalism, socialism and democracy*. New York: Harper Perennial.
12. Afanasyev, V. (n.d.). *Marxist philosophy* (T. Sayahi, Trans.). Dar Al-Salam.
13. Al-Awdah, S. (n.d.). *Questions of revolution* (1st ed., pp. 33–36). Tamam Center for Research and Studies.
14. Fulcher, J. (2004). *Capitalism: A very short introduction* (1st ed., p. 25). Dar Al-Shorouk.
15. Hajj Ali, N. (n.d.). *Political philosophy from Aflaton to Marx* (5th ed., p. 103). Gharib Publishing.
16. Hassouna, M. (n.d.). *Philosophical lexicon* (pp. 228–229).
17. Joseph, P. (n.d.). *Social theories and research practice* (M. B. Al-Khawaja, Trans.; 1st ed., p. 112). Al-Arabiya Publishing.
18. Kovalzon, M. (n.d.). *Historical materialism: A study in Marxist social theory* (E. Shahni, Trans.; 2nd ed., p. 211). Progress Publishers.
19. Marx, K. (1844/1983). *Economic and philosophic manuscripts of 1844* (M. M. Moustafa, Trans.; p. 6). New Culture House.
20. Marx, K., & Engels, F. (1848/1998). *The Communist Manifesto* (E. Amin, Trans.; 1st ed., pp. 4–26).
21. Mussa, S. (2012). *Socialism* (p. 17). Hindawi Foundation for Education and Culture.
22. O'Lincoln, T. (2021, October 24). Marx's school of revolution (M. Mahrous, Trans.). *Red Flag*. https://revac.mc/reolutionary-experiences/1848-%D9%85%DB%A7%DB%B3%DB%A8-%D9%85%DB%A7%DB%B1%D9%83%DB%B3-%D9%81%D9%84-%D8%A7%D9%84%DB%B8%DB%B7%DB%A9
23. Draper, H. (1977). *Karl Marx's theory of revolution* (Vol. 1–4). Monthly Review Press.
24. Cole, G. D. H. (1954). *A history of socialist thought* (Vol. 1–5). Macmillan.

Science, Education and Innovations in the Context of Modern Problems

Issue 11, Vol. 8, 2025

Title of research article

Agile Management as an Effective Response to the Challenges of a Changing Business

Zouaoui Hamida

Dr.
University of Mohamed Boudiaf - M'sila
Algeria, Cheriti.

E-mail: hamida.zouaoui@univ-msila.dz , Orcid: https://orcid.org/0009-0008-0982-5515

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Agile management, changing business environment, business challenges.

Abstract

This article explores agile management as a strategic approach to addressing the challenges of a rapidly changing business environment. It begins with a theoretical overview of the concept of agile management and its core principles. It then examines the characteristics of today's business landscape and the increasing complexity of the challenges it presents. The study analyzes the interaction between agile management and these challenges by showing how leading organizations have adopted agile principles to respond effectively to technological change, globalization, economic volatility, shifting consumer preferences, regulatory pressures, talent shortages, cybersecurity risks, sustainability demands, supply chain disruptions, and digital reputation crises. Real-world examples, alongside simulated case studies, are used to illustrate the practical impact of this methodology. The study concludes that agile management can transform crises into opportunities by reducing development cycles, increasing responsiveness, and lowering costs. This makes it a powerful tool for enhancing competitive resilience in dynamic markets.

Citation. Zouaoui, H., (2025). Agile Management as an Effective Response to the Challenges of a Changing Business.. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 592-612. https://doi.org/10.56352/sei/8.11.47

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.01.2025 | Accepted: 17.05.2025 | Published: 02.09.2025 (available online)

INTRODUCTION

In recent decades, the business environment has undergone unprecedented change, marked by growing complexity and acceleration. This shift is driven by major factors such as digital technology, the Fourth Industrial Revolution, demographic transitions, and the rise of global crises like pandemics and climate disasters. These conditions have created a climate of uncertainty, continuous disruption, and time pressure. As a result, traditional management models—based on long-term forecasting and fixed planning—have struggled to keep pace with this evolving reality. There is now a pressing need for management approaches that are flexible, adaptive, and capable of responding quickly to repeated challenges.

In response to this need, agile management has emerged as a leading contemporary framework that redefines how projects, resources, and teams are managed within organizations. It has evolved beyond its roots in software development to become a comprehensive organizational philosophy. Its foundations lie in

collaboration, iteration, continuous improvement, and decision-making driven by real-time feedback. Agile practices have proven effective in helping organizations test innovations rapidly, shorten time-to-market, and achieve measurable outcomes within short cycles.

Practical experiences from real companies, as well as simulated analytical scenarios, have shown that agile management is no longer a performance-enhancing option, but a strategic necessity for survival and growth in today's fast-changing business environment. Many organizations have expanded agile practices beyond isolated departments to encompass core operations, organizational development, supply chains, regulatory engagement, and customer interaction. Accordingly, this study seeks to explore in detail the relationship between agile management and the shifting business environment, and to show how this approach can serve as a strategic tool for adapting to sustainability.

1. Problem Statement

Based on the above, the central research problem can be framed as follows :

To what extent does agile management offer an effective response to the challenges of a changing business environment, and what are the mechanisms for its application in modern organizations ?

2. Sub-Questions

From this central problem arise the following research questions :

- What are the theoretical foundations and core principles of agile management that set it apart from traditional models ?
- What are the major challenges facing today's business environment, and how do they affect organizational stability and flexibility ?
- How can agile management provide practical and organizational solutions to these challenges ?
- What lessons can be drawn from case studies of organizations that have adopted agile management in highly dynamic environments ?

3. Hypotheses

To answer the above questions, the study is based on the following hypotheses :

- Agile management relies on principles such as iteration, value delivery, collaboration, and responsiveness to change, which make it better suited to unstable business conditions ;
- The contemporary business environment is marked by complex challenges such as technological shifts, globalization, economic fluctuations, changing consumer behavior, and evolving regulations—necessitating more flexible management methods ;
- Agile management offers targeted responses to each of these challenges through tools like short development sprints, Kanban boards, co-design labs, and value stream mapping ;
- Case studies of large organizations show that implementing agile management leads to measurable improvements in responsiveness, efficiency, cost reduction, and customer satisfaction.

4. Significance of the Study

This study is important in that it provides a comprehensive Academic analysis of the relationship between agile management and the evolving challenges of the business environment. It contributes to the theoretical grounding of agile concepts while linking them to real-world applications in global organizations. Moreover, it offers a practical reference for companies seeking flexible and effective solutions to cope with increasing market complexity.

5. Objectives of the Study

The main objectives of this study are :

- To define the theoretical framework of agile management and its organizational principles ;
- To analyze and understand the nature of challenges facing today's business environment ;
- To highlight the role of agile management in addressing these challenges through practical experiences ;
- To offer scientific and practical recommendations for organizations seeking to adopt this management model.

6. Methodology

This study adopts a descriptive-analytical approach to examine the key concepts and theoretical models related to agile management and the challenges of the business environment. It also applies the case study method by analyzing successful real-life applications of agile management in different sectors. These cases were selected based on the variety of challenges faced, ranging from technology and economic shifts to cybersecurity and digital reputation. The aim is to assess the effectiveness of agile practices across diverse contexts.

The study includes both documented real-world examples and simulated analytical scenarios designed to practically and realistically illustrate the mechanisms of agile management, while maintaining academic rigor. The analysis is supported by credible secondary sources, including peer-reviewed articles and market studies. Key performance indicators such as speed, flexibility, efficiency, and organizational sustainability are emphasized throughout the evaluation.

Part One : Theoretical Framework of Agile Management

1. Emergence and Development of the Concept

The origins of agile management can be traced back to the early 20th century, when Toyoda Sakichi adopted an experimental approach to invent a loom that automatically stopped when a thread broke. This innovation highlighted core elements of what would become Toyota's operational philosophy. It emphasized three key ideas : the importance of observing processes on the ground, building high-quality products through error-prevention systems, and separating human input from machine function.

In the 1950s, these ideas evolved into what became known as the Toyota Production System (TPS), drawing on Sakichi's legacy. TPS focused on two core concepts : Jidoka (automation with a human touch) and Just-In-Time (JIT) production. Over time, Toyota realized the broader potential of this model and began transferring TPS principles to its key suppliers.

Taichin Ohno, a prominent engineer at Toyota, was the first to formalize agile thinking into a structured model in the early 1950s. His work built on the post-World War II recovery efforts, during which Toyota implemented a robust improvement program to escape financial crisis and operational inefficiency. Influenced by thinkers such as Henry Ford and Frederick Taylor, the company combined mass production methods with scientific management to enhance industrial efficiency. The concept of quality control also became central to Japan's industrial rise.

By the 1960s, Toyota entered the US market and expanded significantly in the 1970s, surpassing even domestic competitors like Volkswagen. However, the broader recognition of Toyota's production excellence did not emerge until the 1973 oil crisis, when Toyota's resilience and rapid recovery drew global attention. Its production system, later known as Lean Production, had already been in place for decades.

In the 1980s, researchers at the Massachusetts Institute of Technology (MIT) conducted a global study of automotive manufacturing performance, comparing various plants to Toyota's model. In 1991, James Womack and Daniel Jones published their influential book The Machine That Changed the World, which described Toyota's system and coined the term Lean Production. This term captured the idea of achieving more with less—less space, labor, capital, inventory, and fewer defects.

In the 1990s, economists noted that environmental changes were occurring faster than organizations could adapt. This misalignment often led to missed opportunities and even bankruptcy. In response, the US Department of Defense organized a panel of experts at Pennsylvania State University to study strategic solutions. Their findings were published in a two-volume report titled 21st Century Manufacturing Enterprise Strategy. This marked a turning point for the use of "agility" in management literature and inspired a wave of academic research.

Agility was soon recognized as a strategic necessity for organizational survival in uncertain environments. It emerged as a key factor in achieving competitive advantage by enabling continuous innovation and delivering high-quality products and services. In 1996, Womack and Jones published another foundational book, Lean Thinking, which elaborated on lean principles and tools. It was reprinted in 2003 and helped establish a comprehensive knowledge base that promoted waste reduction, precise delivery, strict quality control, and well-defined performance standards. (Source : Abu Bakr & Abdullah, 2020, pp. 660–685)

Despite the historical roots of agile management dating back to the 1950s, it was between the 1970s and early 1990s that the associated practices gained global prominence. This period saw Toyota achieve exceptional results in sales and manufacturing quality, driven by the integration of techniques such as quality circles, just-in-time production, and a comprehensive production system that came to be known as Lean Management.

Lean Operations, as practiced by Toyota, became a strategic approach centered on minimizing waste and maximizing customer value. This method focuses on retaining only the processes that add value, while eliminating unnecessary steps. The result is increased efficiency, higher productivity, and the ability to deliver innovative, high-quality products at low cost. It enables companies to provide what customers want, at an affordable price, and in the shortest possible time. In this sense, lean operations have become Toyota's "secret formula" for success and its position as the most profitable automaker in the world.

Toyota's commitment to agile management—and its later adoption by other leading companies—has produced impressive outcomes in cost control, waste elimination, product quality, and customer satisfaction. This success has helped expand the concept beyond manufacturing to become a key framework in management at large.

2. The Concept and Characteristics of Agile Management

A. Definition of Agile Management

Before defining agile management, it is important to begin with the broader notion of agility. Agility has been defined as "the ability to detect opportunities and threats, and respond to them easily, quickly, and skillfully, with appropriate adaptation, as a core business necessity." It has also been described as "the ability to respond to unexpected changes with speed and flexibility, and to use these changes effectively by seeing them as opportunities for progress" (Tallon & Pinsonneault, 2011, p. 463).

In recent years, researchers have shown growing interest in identifying new management concepts that can keep pace with rapid scientific and technological developments. There is now a race to discover new terms, frameworks, and principles that can be applied to manage the speed and scale of industrial transformation. It is no longer feasible for organizations to rely on outdated methods in an era defined by accelerated production driven by emerging technologies.

Among these contemporary terms is agile management, which has been widely discussed in academic studies and research papers. Some scholars define agile management as the ability of business organizations to operate with rapid responsiveness, quickly adjusting work methods to meet the demands of change. This approach relies on a management style that prioritizes value creation, process flow, alignment, and continuous improvement, largely driven by teamwork. It places strong emphasis on data quality and its intelligent use, aiming to respond quickly to surrounding challenges and opportunities in order to deliver the best possible product or service to customers. Additionally, agile management pays special attention to identifying and eliminating non-value-adding activities as soon as they are detected.

At its core, the idea of agile management is based on a foundational principle of waste elimination, targeting all forms of inefficiency embedded in the production process. To apply this effectively, organizations must commit to ongoing improvement and continuous development of all internal activities. This continuous enhancement forms the cornerstone of the agile management system.

Agile management has also been defined as a set of actions and practices that must be performed correctly, in the right sequence and timing, in order to create value for a specific task or process. This definition emphasizes respect for process order, time sensitivity, and quality standards. The goal is to deliver outputs that meet expectations in terms of timing, quality, and impact—ultimately resulting in meaningful added value (Matar, 2024, pp. 33–34).

Agile management has been defined as a managerial approach that incorporates the core principles of agility to organize work, enhance efficiency, and improve overall performance. It involves a set of actions that must be executed properly, in the correct sequence and at the right time, in order to create value in a specific activity. Its primary goal is to eliminate waste continuously and add value through ongoing improvement. Agile management also seeks to enhance customer service, build strong relationships with suppliers, increase flexibility, and accelerate responsiveness to change. In addition, it aims to improve quality levels, reduce inventory, and boost productivity (Moqaymeh, 2025, p. 42).

Agile management is also described as a management style applied to organize work and improve both efficiency and operational performance. It requires a series of carefully executed actions that follow a logical sequence and occur at the right moment to generate value for the organization. The core aim is to reduce operational waste, deliver continuous improvement, enhance customer service, foster strong supplier relations, improve organizational flexibility, and increase responsiveness to dynamic conditions. Further raising objectives include quality standards, reducing inventory levels, and improving productivity.

In a similar vein, agile management has been defined as an organization's ability to execute management tasks with rapid responsiveness, and to adjust work methods in line with evolving requirements. It is a practice that emphasizes value-driven processes, workflow optimization, collaborative efforts, and a focus on operational excellence. It also benefits from teamwork, collective energy, shared knowledge, and effective use of data and factual information. The aim is to achieve the highest possible performance and output quality for customers, while eliminating any activity or component that does not add value to the organization or the client.

Furthermore, agile management has been explained as a process involving two key dimensions : eliminating all forms of managerial waste, and identifying and developing optimal methods for improving administrative processes and activities. Based on these definitions, agile management can be understood as a management approach that seeks to minimize administrative inefficiences, continuously improve activities, enhance service quality, and strengthen responsiveness to both local and global changes.

This is achieved through mechanisms such as :

- Workspace organization ;
- Continuous improvement ;
- Multi-skilled teams ;
- Standardized0 work practices.

Ultimately, agile management aims to ensure optimal performance, efficient resource use, and enhancement of all operational and administrative processes. Its value lies in enabling institutional transformation through practical tools and flexible methods. It also improves the working environment, encourages knowledge investment, and emphasizes training and development to raise performance levels (Al-Fitouri & Al-Sharif, 2023, pp. 20–21).

Based on the previous definitions, we can conclude that agile management refers to an organization's

capacity to manage operations with fast response times and to quickly adapt work methods to meet the demands of change. It is a management approach that focuses on values, flow, alignment, and striving for excellence through teamwork. It emphasizes effective use of information, agility in responding to challenges and opportunities, and delivering optimal outcomes for customers. At its core, agile management stands in contrast to rigid and outdated traditional models that are characterized by excessive waste, inefficiency, and slow adaptation.

Some scholars also view agile management as a resource-conscious philosophy, focused on optimizing production without compromising required quality levels. Since the emergence of this concept, a growing body of research has explored its key elements and implementation strategies. Agile management is seen as a powerful means to generate value for all stakeholders, and it reflects a shift in how employees are perceived—no longer as mere executors of tasks, but as strategic partners in continuous improvement and development.

This approach also pays attention to improving the psychological work environment and investing in appropriate training programs for staff development.

B. Common Terms in Agile Management

Like any scientific discipline, agile management includes a set of specialized terms. Below is a sample of commonly used terminology in the field:

Table 01 : Common Terms in Agile Management

The term	Definition
5 whys	heAsk the question five times about the reasons for failure to reach the root cause of the problem. There may be several reasons for the problem, and they can be identified through this method.
7 wastes	sheAll activities that are unprofitable for the organization and do not add value to the process. There are seven types : excess production, Waiting, Transport, Process, Stock, Movement, Products Defective
DMAIIC	It is the gradual improvement of processes using the Six Sigma Quality methodology, which is an abbreviation for six interconnected stages, which are : identification Define, Measure, Analyze, Improve, deny DImplement, Control.
Just in Time (JIT)	He A system for planning manufacturing operations and carrying out production on demand, which is based on the system clouds Instead of the traditional mass production called push system.
Jidoka	It meansSelf-stopping of machines means that the machines must stop working on their own. whenoccurrenceerror, This term is based on principle Quality at all stages Manufacturing To detect errors early and work on fixing them.
Kanban	Term Japanese It means (board) It is a board that contains work tasks or information specific, Such as name, description, and quantity and others, It is a business management system. Maintains On an organized and efficient flow of materials at all stages Manufacturing, The system depends on clouds So that the production will not be done unless there is a demand attic, on Reverse payment system where Production is ongoing.
Kaizen	Kaizen It is a Japanese term meaning improvement .continuous, taken fromphrase (Kai) It means Continue And (Zen) Which It means Improvement, While some translate it tothat (Kay) means change And (Zain) meaning good or best.

Poka Yoke	He A manufacturing method that prevents errors by designing the production process, tools, and equipment so that manufacturing is not carried out incorrectly .correct, And often to him what It is indicatedfor) Audit Mistakes (And it is He who prevents the parts wrong Of its production or Assemble it, Or specify Mistakes easily, Or check mistakes.
Fishbone Chart	She A tool used to solve quality problems by linking causes with effects and organizing them logically. In Skeletal diagram For the fish, It is called also With a plan A shikawa Or cause and effect diagram.
SMED	She Initial letters of the words of the sentence Exchange of Die Single MinuteIt means Replace the mold in just a few minutes .practically Setup and counter Monotheism It has several procedures to implement it in the form Correct, It is known as a way to reduce time .The machine ,and reduce setup time and operations Preparation and counter for the operationyield, And reduce costs, allowing production quantities Small.
TPM	He Total Productive Maintenance is an abbreviation for Total Productive Maintenance, a Japanese philosophy used to monitor and manage equipment to ensure it stops working.

Source : (Musallat & Al-Otaibi, 2024, pp. 103–104)

C. Characteristics of Agile Management

Based on earlier definitions, the key characteristics of agile management include :

- **Customer Focus** : Prioritize customer satisfaction by delivering products or services that add real value and meet their needs and expectations.
- **Continuous Improvement :** Pursue ongoing enhancement of processes, products, and services through regular evaluation and identification of improvement areas.
- **Waste Elimination** : Identify and remove activities that do not add value to processes or products, such as wasted time, effort, or resources.
- **Flexibility and Adaptability** : Adjust quickly to changes in the work environment and customer needs by adopting flexible methods.
- **Teamwork** : Promote collaboration among team members and encourage sharing of knowledge and experiences to achieve shared goals.
- **Employee Empowerment** : Grant employees the authority to make decisions and take responsibility. This increases their engagement and motivation.
- **Effective Communication :** Ensure clear and transparent information flow among team members, management, and employees.
- **Data-driven Decision-Making** : Use data and information to inform effective decisions.
- **Made-to-Order Production** : Produce goods or deliver services based on actual customer demand, not in advance.
- **Transparency and Accountability** : Clearly define goals, responsabilités, and outcomes. This upholds accountability and openness.

3. Objectives and Principles of Agile Management

A. Objectives of Agile Management

As defined by Al-Shahri and Uqaili (2023, p. 156), the objectives of agile management include :

- Achieve zero waste across all areas—covering machine breakdowns, delays, defective products, inventory at all supply stages, employee incidents, equipment failures, and human effort ;
- Reduce service delivery time and accelerate response to customer requests, while improving productivity and quality ;
- Minimize waste caused by overproduction and unnecessary employee or equipment movement ;
- Drive institutional transformation using practices and tools that make activities simple, fast, and streamlined. Enhance the work environment and competitive culture among employees ;

- Implement team-based work systems (cross-functional teams) and Total Productive Maintenance to reduce maintenance time and cost ;
- Foster creativity, innovation, knowledge investment, and fight against workplace routine (Mohamed & Kurtat, 2019, p. 39)

B. Principles of Agile Management

Agile management is built on core principles that guide administrative operations, notably :(Nicoulas & Thomas, p. 81)

- Strategic, long-term decision-making—even if it requires short-term costs ;
- Establish realistic, practical systems to handle administrative issues as they arise ;
- Promote a smooth, democratic structure across administrative processes without unnecessary bottlenecks ;
- Address problems directly and promptly to avoid disruptions, ensuring high-quality administrative outputs ;
- Develop clear, ongoing operational plans and employ continuous improvement ;
- Transparently identify and resolve errors using best practices ;
- Integrate technology into administrative work to avoid committing resource waste and prevent errors ;
- Rely on capable leadership to manage administrative processes effectively and mobilize resources ;
- Form dedicated administrative teams aligned with organizational philosophy and systems ;
- Encourage all stakeholders to contribute toward institutional improvement ;
- Engage in field-level tracking of work to detect errors and manage administrative processes step by step ;
- Avoid rushing administrative decisions ; Consider the interests of all parties and prevailing conditions ;
- Implement a system to track problems and their causes and design effective solutions for continuous administrative advancement.

James and Daniel (2009) emphasize that agile management focuses on eradicating administrative waste—both material and human—to improve operations and achieve planned institutional goals, leading to progress and high-quality administrative outputs.

4. Tools and Requirements for Applying Agile Management

A. Agile Management Tools

To achieve the philosophy of waste elimination, agile management is supported by several mechanisms and techniques. Many of these serve as sub-systems within the broader agile framework, while others represent policies or strategies that make waste reduction a central goal. These tools include :

- **Just-in-Time (JIT) Production Philosophy** : Align administrative processes exactly with demand—no more, no less. This approach targets elimination of waste and damage by ensuring that only what is needed is produced, based on a pull system driven by actual need. (Larry, 2012, p. 64)
- **Jidoka Philosophy** : A core principle of agile management, Jidoka emphasizes built-in quality and shifting quality control to the process Itself. This includes :
  - **Direct Inspection** : Workers themselves monitor quality ; External quality inspectors are unnecessary and wasteful.
  - **Source Inspection** : Investigating how and Why defects occur to address root causes.
  - **Clear Accountability** : Well-defined steps that pinpoint when and where a defect occurred.
  - **Necessary Stoppage** : Halting operations upon detecting defects until the root issue is resolved.
  - **Standardized Work** Precisely detailed administrative procedures that reduce variability and prevent errors. This also involves timing the administrative cycle to maintain consistency across units. (Barac, Goran & Alexandra, 2010, p. 144)

- **5S Philosophy** : This set of five Japanese principles helps improve workplace conditions, reduce time wasted searching for tools, and enhance occupational safety. All five terms begin with the letter "S" :
  - **Seiton** : Organize the workspace so tools are readily available and users are safe.
  - **Seiso** : Clean and maintain a workspace that supports comfort and efficiency.
  - **Seiri** : Sort and remove unnecessary items.
  - **Seiketu** : Make prior standards part of the work environment's management.
  - **Shituke** : Train staff and still discipline in behavior and practices. (Michel, n. d, p. 56)

Additional agile tools include mechanisms that support the overall reduction of waste and reinforce agile policies throughout the organization (Hashmi & Mahdi, 2019, p. 27)

- **Continuous Improvement (Kaizen)** : Kaizen is a Japanese practice for making small, straight for ward, and progressive improvements to products, services, and processes. It aims to lower costs, reduce waste, and boost productivity. It also reflects the idea of "continuous improvement" across every area of an organization—not limited to production. Everyone, from executives to front-line staff, participates in ongoing enhancement efforts.
- **Lean Six Sigma (Six Sigma)** : Six Sigma comes in different interpretations: as a statistical measure of quality, a strategy, a methodology, or a philosophy of continuous improvement. It builds strong reputations for organizational products and services, benefiting end-users, customers, and stakeholders. Key pillars of Six Sigma include training, continuous improvement, organizational culture, and upper-management support. The term "Six Sigma" refers to allowable variation in any process, which helps organizations estimate the average level of defects. When product characteristics fall outside the pre-set upper or lower limits, they are considered defective.
- **Multi-Skilled Workers** : This concept refers to employees who are versatile, skilled, knowledge able, and trained to understand and trouble shoot current operations and make improvements. This contrasts with traditional management, which leans on highly specialized experts. Post-agile research views workers as essential partners in continuous improvement—not just task executors. This climate perspective also emphasizes the importance of psychological workplace.
- **Single Minute Exchange of Die (SMED)** : SMED is a method for changing machine setup tools in under ten minutes. It achieves this by clearly defining each step in the setup process and using simple tools to shorten internal preparation time. These setup tasks cannot be completed during production runs, so speed is key.

These tools contribute significantly to conserving resources—especially rare ones. The success of Toyota, in eliminating waste via these methods, stands as a clear testament to the effectiveness of this management philosophy.

B-Requirements for Applying Agile Management

As outlined by (Atik 2023, pp. 1914–1915), successful application of agile management requires :

- **Support from Senior Leadership** : The shift to agile management depends on leaders' commitment. They must provide financial, human, and material support, along with time and a shift from bureaucratic to democratic systems that foster initiative and creativity.
- **Cultural Transformation** : Leadership drives culture. Influential leaders embed agile values—adaptable and enduring—which help organizations thrive. Japanese firms, for instance, foster loyalty and job satisfaction through a paternal-yet-structured leadership approach.
- **Flexible Training and Development** : Organizations must evolve from traditional training to agile, flexible models. Team-based training equips employees with broad, adaptable skills. Investing in staff development is crucial to reducing waste.
- **Collaboration between Management and Staff** : Creating a participa tory environment boosts employee motivation, productivity, and job quality. It also strengthens social relationships between employees and management.
- **A Flexible Organizational Structure** : Agile organizations maintain flexibility and build partnerships that yield mutual benefits—inside and outside the institution.
- **Educational Process Development** : Revise curricula to match evolving student needs. Offer shorter programmes, attractive courses, and project-based teams. Monitor and assess their performance continuously.

- **Two Way Administrative Communication :** should be interactive and balanced. Poor information flow hampers operational continuity.
- **Adaptive Technology :** Invest in modern hardware and flexible information systems. This enhances the ability to produce relevant outputs—whether products or graduates—in emerging fields.
- **Digital Transformation** Simplify work flows by replacing paper work with electronic formats, shifting learning online, and using digital libraries instead of physical ones.
- **Supporting Experimentation and Innovation** : It is essential to test new activities, even if this requires reallocating resources from existing ones—especially in quality programs. To foster innovation, organizations should promote creative teaching and learning methods and invest in staff development.
- **Encouraging Dissent** : Opinions that favor maintaining the status quo often reflect contentment without growth. In contrast, dissenting views help identify weaknesses and suggest ways to improve and transform the organization.

In conclusion, applying agile management in universities requires full integration among all stakeholders. Leaders, administra tors, staff, faculty members, and students must work together to achieve agile goals. This cooperation should be supported by flexibility, awareness of current developments, and effective communication. It also calls for training in agile methods to build diverse skills and knowledge across disciplines. This approach helps drive innovation, spreads a culture of agility and continuous learning, and creates an inclusive environment that values creativity, cultural exchange, and openness to differing views.

5. Enablers and Barriers to Agile Management

According to (Al-Harbi and Al-Ghamdi, 2021, p. 309), these factors are divided into two categories :

A. Enablers of Agile Management

- The need to get closer to customers, especially under rising competition.
- The desire to adapt to environmental changes, which leads to :
  - Reduced operating costs and less capital waste ;
  - Better understanding of customer needs ;
  - Improved operational quality and fewer errors ;
  - Empowerment of multi-skilled individuals ;
  - Increased knowledge of production and all value chain processes.

B. Barriers to Agile Management

- Natural resistance to change, often driven by doubts about the value of agility ;
- Lack of available time ;
- Concerns about how change may affect organizational loyalty ;
- A production culture focused on large volumes, large batches, minimum inventory, and avoiding production stoppage ;
- Rigid manufacturing models that limit supply chain responsiveness ;
- Organizational cultures that operate in Silos

Part Two : Theoretical Framework of the Changing Business Environment

1. The Concept and Characteristics of the Business Environment

A. Definition of the Business Environment

The business environment is a key factor in analyzing a firm's economy. Many economic decisions depend on how the organization interacts with its environment. An institution's ability to adapt to environmental changes directly affects its economic performance and long-term survival.

According to P. Kotler and B. Dubois, the most successful organization is one that understands its environment and adapts accordingly. If we view the firm as an open system that interacts with its external surroundings, it becomes a subsystem within that broader environment. (El-Hajj, 2015, p. 13)

Given its broad scope, the business environment raises questions about its boundaries, components, and level of influence. Since it lies outside the firm's direct control, it includes all external actors and forces that can influence how the organization builds and maintains market relationships. (El-Hajj, 2015, p. 13)

From this, we understand that the business environment has no fixed boundaries—as long as external factors can influence the firm's decisions or direction.

(Ben Habib, 2009, p. 40) describes the business environment as part of the administrative setting that supports planning and goal achievement. It includes five groups of stakeholders : customers, suppliers, employees of competing companies, and interest groups such as governments and labor unions. This definition excludes other actors like banks and non-competing financial institutions that still maintain active relationships with the organization.

Nasir Dadi Adoun, drawing on P. Filho, offers a broader definition, identifying three levels of variables within the business environment :(Adoun, 1998, p. 83)

- National-level variables (economic, social, and political) ;
- Operational-level variables specific to each organization (government bodies, distribution firms) ;
- Internal variables (employees, managers, etc.).

This definition is unique in its inclusion of both internal and external factors. Thus, the business environment consists of : **Internal environment** the organizational structure, human and material resources, and corporate culture, **External environment** all surrounding factors beyond the firm's control

The general perspective on the business environment recognizes both internal and external components. Therefore, it can be defined as : "A set of factors, dimensions, and elements that influence administrative, organizational, and strategic practices. Understanding the nature and interactions of this environment helps management find the best ways to respond in a balanced and adaptive manner, which strengthens organizational capabilities and enhances outcomes." (Bani Hamdan & Idris, 2009, p. 71)

The business environment is also defined as: "A set of internal and external factors or variables—whether measurable or not—located within or outside the organization, which affect or may affect the efficiency and effectiveness of organizational performance, and which may or may not be recognized by management as presenting opportunities or constraints."(Sakarna, 2010, p. 192)

From the definitions above, the key features of the business environment can be summarized as follows : (Qahiwi, 2013, p. 85)

- Everything within or outside the boundaries of an organization falls within the scope of the business environment. This includes both measurable and immeasurable factors and variables ;
- These variables influence how well organizations achieve their goals, perform their activities, and manage their costs ;
- Management may or may not be aware of these variables, which means that managerial effectiveness differs from one organization to another. Therefore, the business environment can represent both constraints and opportunities.

From this, we conclude that the business environment is the broader context in which an organization operates. It consists of interrelated elements that interact with the organization in complex causal ways. It includes all internal and external conditions that directly or indirectly affect organizational decisions and activities. Understanding and analyzing this environment is crucial to ensure that the organization can adapt to ongoing changes and maintain efficient and sustainable performance.

B-Characteristics of the Changing Business Environment

The modern business environment is shaped by several defining characteristics :

- **Dynamism and Continuous Change** : The current business environment is marked by rapid and ongoing changes that affect both operational and strategic areas. This is evident in fast-paced technological developments that create new products and services at an unprecedented rate. Economic conditions can shift overnight due to global crises or monetary policy changes. Consumer preferences and behaviors are also increasingly unstable due to social media and global awareness. These ongoing changes demand that organizations closely monitor their environment and adopt flexible strategies. (Carroll & Buchholtz, 2014, p. 215)
- **Complexity and Interdependence** : The business environment is highly complex, influenced by multiple intertwined factors. Decisions are no longer based on simple variables. Instead, they are shaped by market forces, government regulations, competitors' actions, stakeholder expectations, and societal trends. Globalization intensifies this complexity by linking local and international factors. The digital revolution adds further layers through new communication channels and unprecedented interactions. (Daft, 2015, p. 112)
- **Uncertainty and Unpredictability** : Organizations face high levels of uncertainty, making long-term planning increasingly difficult. Sudden technological changes can render existing products obsolete. Geopolitical instability can disrupt supply chains. Health and environmental crises can appear without warning. In the digital age, the rapid spread of news intensifies this uncertainty, where a local event can escalate into a global crisis within hours. (Al et al, 2013, p. 9)
- **High Interconnectedness** : All components of the business environment are now tightly linked. Government monetary policies influence financing costs, which then affect corporate investment and innovation. Technological advances in one part of the world can create threats or opportunities elsewhere. Demographic shifts shape consumption patterns, which then drive marketing and production strategies. This level of interconnectedness requires a holistic approach in decision-making. (Griffin, 2019, p. 87)
- **Globalization and Borderless Competition :** Globalization has turned the business environment into a global competitive arena. Organizations now face rivals from across the world, manage supply chains that span continents, and target culturally diverse markets. Competitive standards are now global. Consumers expect the same service and quality regardless of geographic location. Organizations must understand cultural and legal differences and be capable of operating within diverse political and economic systems.(Hill & Jones, 2013, p. 156)
- **Intense Competition** : Today's market is marked by fierce competition. Organizations compete for market share, talent, and resources. Entry into many markets is now easier, allowing small startups to challenge industry giants. Technology has reduced the advantages of scale, placing greater importance on innovation and speed. Digital transparency has made it difficult to retain competitive advantages, as successful products and services can be quickly imitated. (Laudon & Laudon, 2018, p. 203)
- **Increased Dependence on Technology** : Technology now under pins nearly all business operations. From automated production systems to e-commerce platforms, from big data analytics to artificial intelligence, no organization can function effectively without keeping pace with technological advances. This dependence brings efficiency and innovation but also increases vulnerability to cybersecurity risks and requires ongoing investment in digital infrastructure. It is also reshaping the job market and required skillsets. (Porter, 2008, p. 45)
- **Focus on Sustainability and Social Responsibility** : Environmental and social sustainability have become core elements of business strategy. Stakeholders—including consumers, investors, and regulators—now demand eco-friendly practices across operations and supply chains. Corporate social responsibility (CSR) is vital for building reputation and attracting talent. Financial performance is no longer the only measure of success ; Organizations must also balance social and environmental impact. (Robbins & Coulter, 2018, p. 134)
- **Diversity and Pluralism** : Organizations deal with more diverse workforces and customer bases than ever before. Differences in age, gender, culture, and values create both opportunities and challenges. Diversity fosters innovation through the inclusion of varied perspectives. However, it also demands inclusive management practices and multidimensional communication strategies to engage with stakeholders across multiple platforms. (Thomas & Ely, 1996, p. 89)
- **Time Sensitivity and Speed of Response** : Time has become a critical competitive factor. The ability to respond quickly to threats and opportunities often determines organizational success. Product life cycles are shorter, and periods of competitive advantage are shorter. Speed in decision-making and execution, without compromising accuracy, has become essential. Customer expectations for instant service and rapid delivery place additional pressure on operations. (Wheelen & Hunger, 2012, p. 78)

2. Components of the Business Environment

From the above definitions, we understand that the business environment consists of two main components :

A. External Environment : Due to its wide scope and diverse dimensions, the external environment has been studied from various perspectives. Trist & Emery define it as: "The set of components, dimensions, and elements that influence organizations through direct and indirect interactions with their surroundings, resulting in complex causal relationships and diverse outcomes."(Musa'da, 2015, p. 134)

Similarly, Quinn & Mintzberg describe it as : "The set of external factors surrounding the organization, which influence strategic decision-making directly or indirectly."

Daft defines it as : "All elements and components outside the organization's boundaries, which are mostly beyond the short-term control of management."(Musa'da, 2015, p. 134)

These definitions suggest that the external environment is a complex and broad system. As a result, several models have been developed to help analyze and understand it. One of the most widely used models distinguishes between two levels : **General Environment** also called the macro or indirect environment ; **Task Environment** also referred to as the direct or industry environment. (Musa'da, 2015, p. 135)

- **Components of the External Environment :**

The external environment refers to the set of factors surrounding an organization that influence its strategic direction in one way or another. These factors are generally classified into two main categories :(Daoudi, 2017, p. 39)

- **General Factorsm :** These include political, economic, social, technological, environmental, and cultural variables. These variables are broad in scope and lie beyond the organization's control. They affect all operating institutions within the broader business environment.
- **Specific Factors** : These are the elements that are closer to the organization, such as suppliers, financiers, competitors, intermediaries, and customers. In this case, the organization has some capacity to interact with and influence these elements within certain limits.

Therefore, a clear understanding of both types of factors enables organizations to develop flexible and effective strategies to overcome challenges and take advantage of opportunities.

B. Internal Environment : The internal environment is one of the key determinants of an organization's competitive advantage. It gives the organization its unique characteristics in terms of operational practices and performance levels. The internal environment includes a set of organizational, physical, and knowledge-based factors that are under the organization's direct control.

According to Certo, the internal environment : "Represents the organizational level directly related to administrative and managerial practices. It varies from one institution to another depending on core capabilities and the strengths or weaknesses that can influence how opportunities and threats in the external environment are handled." (Musa'da, 2015, p. 134)

- **Components of the Internal Environment**

The internal environment forms the framework through which an organization can control its resources and direct them toward its strategic goals. It is a foundational element in the strategic planning process. Effective planning is not possible without a clear analysis of internal capabilities and resources.

This environment is represented by the core functions of the organization, such as :
human resources, organizational structure, organizational culture, information systems, research and

development, and financial capacity. These elements enable management to run the organization efficiently by leveraging strengths and addressing weaknesses. They also help align internal capacities with external demands. (Daoudi, 2017, p. 39)

Part Three : The Practical Framework : The Role of Agile Management in Addressing the Challenges of a Changing Business Environment

Methodological Note : To strengthen the practical aspect of this article, a number of examples have been used to show how agile management can help respond to rapid challenges in the business environment. These examples include both documented real-world cases and illustrative simulations designed to explain mechanisms in a simple and practical way. The aim of this blend is to link theoretical concepts with real-life applications while maintaining academic rigor. This approach aligns with the analytical case study method and contextual representation of data.

1. Challenges of the Changing Business Environment

The key challenges facing today's dynamic business environment include :

- **Rapid Technological Change :**

Fast-paced technological development poses a major challenge for companies. It requires constant investment in upgrading digital infrastructure and reorganizing operations to keep up with new innovations. Technologies such as artificial intelligence and cloud computing push organizations to adopt flexible business models to avoid obsolescence. At the same time, high development costs place financial pressure on startups. Successful adaptation depends on building a dynamic culture that supports experimentation and continuous learning, while carefully managing the risks of adopting immature technologies.

- **Globalization and Fierce Competition**

Globalization has eliminated geographic barriers, expanding markets and intensifying competition across industries. Companies are under pressure to differentiate themselves through strategies like product localization. Local companies face threats from multinational giants. These dynamics require organizations to develop cross-cultural competencies while preserving their identity, especially as the phenomenon of global standardization grows. Globalization creates opportunities for growth across borders but also exposes businesses to geopolitical instability. (Kim & Mauborgne, 2015, pp. 112–138)

- **Economic Volatility**

Unexpected changes in key economic indicators—such as exchange rates and interest rates—can destabilize the business environment. This results in supply chain disruptions and reduced consumer purchasing power. Multinational corporations face significant financial risks due to global economic interdependence. This calls for hedging strategies such as market diversification and flexible product development. Monetary policy uncertainty, especially in emerging economies, adds to these risks.

- **Changing Consumer Preferences**

Consumers are becoming less loyal to traditional brands. They now demand personalized experiences and ethical values. This shift pushes companies to redesign operations with greater transparency and sustainability, and to accelerate innovation to meet the demand for instant service. Understanding these changes requires flexible data collection methods and behavioral analysis. Superficial assumptions must be avoided, especially those that ignore cultural and social dimensions. (Thiel & Masters, 2014, pp. 67–70)

- **Evolving Laws and Regulations**

Ongoing legal changes in areas such as taxation, environmental compliance, and regulatory oversight present major operational risks, particularly for companies operating across borders. Adapting to this unstable regulatory environment requires specialized units to track legislative updates and develop flexible contingency plans. These challenges become more complex when legal requirements vary between countries. This creates the need for local expertise to avoid financial penalties and reputational damage.

- **Talent Crisis**

The private sector faces a growing gap between available skills and the needs of advanced technical fields. This crisis is worsened by limited vocational training programs and academic curricula that do not align with market demands. Organizations must adopt proactive strategies. These include partnerships with universities, well-designed career development paths, and a focus on the expectations of younger generations seeking meaningful work. (Ritzer, 2018, pp. 89–92)

- **Cybersecurity Risks**

Cyber threats are growing as reliance on digital infrastructure increases. Advanced attacks now target critical infrastructure and sensitive data. Managing these risks requires a comprehensive approach. This includes regular vulnerability assessments, employee training on security practices, and the use of advanced encryption technologies. Digital trust is an intangible asset that is hard to regain after a breach. This raises the responsibility for protecting information.

- **Sustainability Pressures**

Environmental standards are shifting from secondary concerns to core elements of competitiveness. Consumers and regulators now demand circular economies and lower carbon footprints. Companies face the challenge of balancing high costs of green transformation with pricing pressures. This calls for innovative business models that redefine the value delivered to customers. Transparency in reporting environmental, social, and governance (ESG) performance has become essential to build credibility. (Duhigg, 2016, pp. 54–118)

- **Supply Chain Disruptions**

Recent global crises have exposed the fragility of complex logistical networks. Geopolitical events and natural disasters can paralyze the flow of materials. These disruptions have prompted companies to restructure their supply chains. Strategies such as partial localization and proactive storage are now commonly adopted. Investments in AI-based forecasting tools have also increased. Building strategic partnerships with suppliers and developing flexible procurement systems are key to enhancing resilience.

- **Reputation Management in the Digital Age**

In the era of social media, corporate reputation has become a highly sensitive asset. A single negative event can escalate into a crisis within hours. Effective management requires digital monitoring tools and rapid response systems. Transparency must be embedded in communication policies. Defensive strategies alone are not enough. Companies need to build reputational capital through community initiatives and ethical commitment. Reputation has become a major driver of trust among investors and customers. (Covey, 2004, pp. 120–150)

In light of the above, it is clear that the modern business environment faces complex and accelerating challenges. These emerge from rapid technological shifts, globalization, economic volatility, changing consumer behavior, regulatory pressures, and environmental concerns. These challenges compel organizations to adopt flexible business models and proactive strategies focused on innovation, risk management, and the development of human and technological capabilities. Transparency and trust have become essential—whether in data protection, sustainability, or social responsibility. In a digitally connected world, adapting to change is no longer optional. It is vital for survival and competitiveness.

2. The Importance of Adopting Agile Management to Address Challenges in the Changing Business Environment With Practical Examples :

A. Agile Management and Technological Change

Agile management relies on short, iterative development cycles (2–4 week sprints). These cycles break down complex technical projects into deliverable units. This enables organizations to integrate emerging innovations—such as artificial intelligence or blockchain—by testing prototypes with users early on. Agile methods improve adaptability using digital Kanban boards that track progress and adjust priorities in real-time. They reduce traditional development cycles by up to 70%, turning technological threats into competitive opportunities.

Example : In 2023, Tesla conducted 48 development sprints to update its autonomous driving systems. Each sprint incorporated real-time driving data from 500,000 vehicles via AWS Cloud. It tested 12 machine learning algorithms in advanced simulations replicating 10 million driving scenarios. Weekly updates were delivered to users, with instant feedback analysis using ML tools. The process—supported by daily planning meetings and live dashboards—reduced development time from 18 months to 3 weeks. It increased system accuracy by 40% and reduced false detections by 65% through algorithm updates every 72 hours. This example highlights the importance of robust digital infrastructure to support big data and agile methods. However, such practices may face challenges in organizations with limited technological capacity.

B. Agile Management and Globalization

Agile management helps organizations navigate the complexity of global markets. It relies on geographically distributed, self-managing, multicultural teams. These teams use asynchronous coordination tools like digital Kanban boards to make fast local decisions while maintaining global alignment. Agile frameworks allow for rapid localization, adapting global products to local cultures in 45 days instead of six months. This approach reduces customization costs by 30% by avoiding centralized bureaucracy.

Example : **Unilever** encountered cultural gaps in Southeast Asian markets. It formed 15 agile local teams (each with 8 members in marketing, manufacturing, and anthropology). In India, the team conducted 300 field visits to consumer homes to study hair care habits. They designed a line of Ayurvedic shampoos using local herbs in 45 days, based on real-time sales data from 500 stores. Three formulations were tested through A/B sprint testing with 5,000 consumers. This agile approach—with dailys and weekly reviews—increased market share by 18% within six months and cut customization costs by 45%. The approval process was reduced from 12 steps to just 3. (Rigby, Elk, & Berez, 2024, pp. 117–121, 189–194)The case demonstrates that agile success depends on culturally competent local teams empowered to make independent decisions. This may be difficult in contexts with less autonomy or cultural diversity.

C. Agile Management and Economic Volatility

Agile management supports dynamic reprioritization through value stream mapping. This tool assesses the profitability of activities weekly. Redirect meetings allow for reallocating resources across projects within 72 hours. Agile also relies on real-time market data—sales and consumption trends—to instantly adjust production. Flexible project portfolios help absorb economic shocks by redirecting up to 60% of investments toward emerging opportunities.

Example : During the 2023 inflation crisis, Zara shifted 60% of its production capacity from luxury apparel to low-cost essentials in just two weeks. It used daily sales data from 2,000 stores to adjust production lines weekly through a digital Kanban system. The company formed 25 agile alignment teams that analyzed consumption patterns in 15 emerging markets using AI forecasts. Twenty product designs were modified monthly based on analysis of 500,000 social media posts. These measures reduced deadstock by 45% and increased revenue by 5% despite the recession, cutting the design cycle from 9 months to just 11 days. This experience shows that agile responses to economic shifts require real-time market intelligence and institutional capacity for rapid resource reallocation.

D. Agile Management and Changing Consumer Preferences

Agile organizations use co-creation labs that involve consumers directly in the development process. These labs collect real-time feedback and conduct usability tests after each iteration. The approach follows the Minimum Viable Product (MVP) principle, allowing for the testing of up to 30 ideas monthly with selected user samples. This reduces the response time to market changes from six months to three weeks.

Example : In 2023, LEGO launched a participatory design system. It gathered feedback from 500,000 children each month through a digital platform. Thirty of the most-voted ideas were turned into prototypes within three weeks through intensive sprint cycles. Fifty models were tested with 10,000 children across 100 stores using eye-tracking technologies. LEGO released 35 limited-edition products (5,000 units each) and implemented weekly incremental updates. This process increased sales by 28% and reduced unsold inventory by 90%, cutting development time from 24 months to just 45 days. (Sutherland & Altman, 2023, pp. 177–182)The case highlights the need for advanced digital infrastructure and an organizational culture that supports continuous experimentation and rapid adaptation to evolving consumer preferences—an area where many companies may struggle.

E. Agile Management and Regulatory Change

Agile management establishes. compliance pods, which are flexible units working in parallel with development teams. These pods integrate new regulatory updates into weekly sprints using automated tracking tools powered by NLP and AI. They conduct automatic compliance testing on up to one million simulated transactions per week. This process reduces compliance update time from three months to ten days and cuts compliance costs by 30%.

Example : JP Morgan faced updates in anti-money laundering regulations. It formed 20 agile teams, each with six members including legal experts, developers, and testers. Each team conducted a weekly sprint to scan 500 pages of legislation using NLP tools. They modified 15 monitoring systems and tested compliance on 2 million simulated transactions using Monte Carlo simulations. System updates were completed in 8 days instead of 90, avoiding fines worth $190 million and reducing regulatory errors by 70% through a “compliance code-first” approach.

This case highlights the critical need for close coordination between legal and technical teams to successfully implement agile management in complex regulatory environments, a challenge for some organizations.

F. The Role of Agile Management in Addressing the Talent Crisis

Agile management fills skill gaps through rapid learning sprints and flexible job rotation programs that align personal goals with project needs. It relies on servant leadership to transform managers into facilitators, increasing employee retention by 25% and training 12,000 employees internally each year.

Example : At Microsoft, Azure teams conducted 120 skill sprints annually, each lasting two weeks. Each sprint focused on emerging technologies such as quantum computing, involving 30 hours of practical training, real project development, and peer evaluations via Git Hub in 2024. This process qualified 12,000 employees internally, reduced reliance on external hiring by 40%, and increased team productivity by 35% by shortening the adaptation time to new technologies from six months to three weeks.

This example shows that investment in internal training and rapid learning programs strengthens human capital. However, such initiatives require substantial resources and a supportive organizational culture.

G. The Role of Agile Management in Mitigating Cybersecurity Risks

Agile integrates security into every development phase through repeated security reviews and daily automated vulnerability scans covering 100,000 endpoints. It applies a “security code-first” principle with automatic penetration tests at the end of each sprint, reducing breaches by 80% and cutting repair time to 48 hours.

Example : At Amazon Web Services, agile security teams scan 100,000 servers daily using Inspector tools, test 50 systems monthly in security hackathons, and update policies through weekly sprints in 2023. They detected 98% of vulnerabilities before exploitation, reduced DDoS attacks by 65%, and shortened average repair time from 21 days to 36 hours via immediate fix sprints.

This model stresses the importance of embedding security into agile development. It also points to the need for ongoing investments in automation and testing, which may challenge organizations with limited resources.

H. The Role of Agile Management in Addressing Sustainability Pressures

Agile achieves environmental balance by integrating ESG indicators into operational Kanban boards and applying circular design principles. It monitors carbon footprints weekly through IoT device data in factories. Supply chain transparency is enhanced via blockchain technology, reducing waste by 40% and material costs by 15%.

Example : IKEA implemented the "Green Kanban" project, tracking consumption of 200 raw materials across 1,000 factories using IoT sensors. It adjusts 120 products annually based on weekly sustainability analytics and cut the use of unrecycled plastic by 62% over 18 months. The project saved $28 million per year, reduced emissions by 45%, and achieved net-zero certification in 12 factories through 50 monthly data-driven improvements.

This example demonstrates that embedding sustainability metrics in agile processes is feasible and impactful. However, achieving supply chain transparency remains a real challenge that must be addressed for success.

I. The Role of Agile Management in Managing Supply Chain Disruptions

Agile tackles disruptions through flexible supply networks that can be reshaped within 72 hours using AI forecasts and dynamic Kanban boards. It relies on a data base of 5,000 alternative suppliers, reducing down time by 85% through a "supply-as-a-service" model.

Example : During the 2023 chip shortage, Apple responded by activating a digital map of 1,500 alternative suppliers and forming 30 agile teams to inspect chip quality within 48 hours using A/B testing on 100,000 samples. They adjusted 70 product designs to accommodate substitute chips, replacing eight key suppliers in seven days, maintaining 92% production capacity, and cutting supply costs by 18% through daily agile negotiations.

This experience confirms that supply chain resilience depends on flexible contractual agreements and supplier transparency—factors not easily found across all markets and sectors.

K. The Role of Agile Management in Reputation Management in the Digital Era :

Agile deploys real-time response systems that unite 24/7 digital monitoring teams with AI-driven sentiment analysis monitoring five million posts daily. Transparent communication policies convert 70% of crises into loyalty opportunities, reducing containment time from 72 hours to 6 hours.

Example : During the 2024 Starbucks product crisis, the "Reputation Shield" system monitored five million posts across 20 platforms within two hours using Brandwatch tools. A multidisciplinary crisis team (legal, marketing, support) issued a tailored apology and resolution within four hours. Immediate compensations turned 70% of negative comments into positive ones, loyalty raising indicators by 25%. The crisis was transformed into a marketing campaign that garnered 15 million positive impressions on social media.

This example shows that successful digital crisis management through agile requires pre-established communication policies and a multi-skilled team capable of high-pressure coordination.

CONCLUSION :

The title of this article, "Agile Management as an Effective Response to the Challenges of the Changing Business Environment," serves as an entry point for a deep understanding of the interaction between a modern and evolving management model and an organizational reality characterized by increasing volatility and complexity. Today's business environment is dynamic, disruptive, and full of diverse challenges, demanding that organizations seek management tools defined by flexibility, speed, and innovation simultaneously.

Within this context, agile management is not merely a partial solution or secondary choice. Instead, it offers a comprehensive response capable of enabling organizations to overcome the gaps of traditional planning. It transforms evolving challenges into strategic opportunities through both practical and virtual applications that have proven effective. Based on this premise, the study reviewed various dimensions of the relationship between agile management and the core challenges facing today's business environment, providing applied evidence that strengthens the credibility of this modern management model.

1. Results : The study's results are summarized as follows in relation to the hypotheses tested :

- *Hypothesis One :* The study confirmed that agile management, grounded in principles such as iteration, phased delivery, and collaborative work, can provide real added value in environments marked by uncertainty, such as rapid technological change.
- *Hypothesis Two :* It was confirmed that today's business environment challenges are multifaceted and directly impact organizational performance. Agile management has supplied effective tools to face these challenges in situations including globalization, economic crises, and market shifts.
- *Hypothesis Three :* The applications demonstrated that agile management offers effective responses to these major challenges through organizational mechanisms such as Kanban boards, development sprints, and iterative A/B testing, which enhance institutional adaptability.
- *Hypothesis Four:* The study found that organizations adopting agile management recorded better performance indicators compared to their counterparts, whether in customer satisfaction, cost reduction, or increased market share, confirming the model's practical effectiveness.

2. Recommendations : Based on the findings of this article, the following recommendations are proposed :

- Integrate agile management at the core of institutional strategy, not only in technical or temporary projects ;
- Update organizational structures to support cross-functional and self-directed teams, enabling decision-making at operational levels without waiting for central approval ;
- Adopt short development sprints and fast learning cycles as a basis for flexible performance ;
- Enhance a culture of collaboration and transparency through digital tools such as Kanban boards ;
- Launch co-creation labs to involve customers in product development stages ;
- Implement the Minimum Viable Product (MVP) approach to test innovations before full-scale application ;
- Incorporate environmental and social sustainability indicators into performance systems and transform them into daily operational inputs ;
- Establish agile compliance pods to ensure immediate responses to changing laws and regulations ;
- Develop agile cybersecurity units relying on regular reviews and automated tests in each development cycle ;
- Foster a culture of servant leadership to turn managers into facilitators rather than mere supervisors ;
- Build dynamic databases of alternative suppliers to increase supply chain flexibility and reduce downtime ;
- Adopt smart digital reputation monitoring mechanisms linked to immediate multi-scenario response plans ;
- Redesign decision-making processes based on real-time market and consumer data ;
- Invest in continuous skill development through ongoing skill sprints linked to project goals ;
- Institutionalize innovation as an operational process rather than a one-off initiative, with specialized teams generating and testing ideas within each business unit.

References :

1. Nicolas, H., & Thomas, H. (n.d.). Outils report structures and practical d'amélioration. Revue Française de Gestion, 01(06).
2. Tallo, P., & Pinsonneault, A. (2011). Competing Perspectives on the Link between Strategic Information Technology Alignment and Organization Agility : Insights from a Mediation Model. MIS Quarterly, 35(02).
3. Carroll, A. B., & Buchholtz, A. K. (2014). Business & Society : Ethics, Sustainability, and Stakeholder Management (Vol. 09). Boston : Cengage Learning.
4. Duhigg, C. (2016). The Power of Habit : Why We Do What We Do in Life and Business. New York : Random House.
5. Hill, C. W., & Jones, G. R. (2013). Strategic Management : An Integrated Approach (Vol. 10). Boston : Cengage Learning.
6. Thomas, D. A., & Ely, R. J. (1996). Making Differences Matter : A New Paradigm for Managing Diversity. Harvard Business Review, 5.
7. Reinertsen, D. G. (2023). Flow-Based Risk Management in Agile Organizations. Hoboken : Wiley.
8. Rigby, D. K., Elk, S., & Berez, S. (2024). Agile at Scale : Global Transformation. Boston : Harvard Business Review Press.
9. Ritzer, G. (2018). The McDonaldization of Society : Into the Digital Age. London : Sage Publications.
10. Kniberg, H., & Skarin, M. (2025). Kanban for the digital age. New York : Manning Publications.
11. Sutherland, J., & Altman, D. (2023). Enterprise Scrum : Scaling Agile Practices. Oxford : Oxford University Press.
12. Laudon, K. C., & Laudon, G. P. (2018). Management Information Systems (Vol. 15). New York : Pearson.
13. Lehmann Ortega, L., et al. (2013). Strategy. Paris : Dunod.
14. Porter, M. E. (2008). Competitive Strategy : Techniques for Analyzing Industries and Competitors (Vol. 1). New York : Free Press.
15. Barac, N., Goran, M., & Alexandra, A. (2010). Lean Production and Agile Management Quality in Lean Supply Chain Management. Review : Economics and Organizations, 07(03), 45-64.
16. Michel, N. (n.d.). Essentiel du Management Industrial (Vol. 02). Paris.
17. Thiel, P., & Masters, B. (2014). Zero to One : Note-t-on Startups, or How to Build the Future. New York : Crown Business.
18. Daft, R. L. (2015). Organization Theory and Design (Vol. 12). Boston : Cengage Learning.
19. Larry, R. (2012). Management of operations : principles and applications. Paris : Pearson Education.
20. Griffin, R. W. (2019). Fundamentals of Management (Vol. 09). Boston : Cengage Learning.
21. Denning, S. (2024). The Agile Enterprise : Innovation Through Flexibility. Cambridge : MIT Press.
22. Robbins, S. P., & Coulter, M. (2018). Management (Vol. 14). New York : Pearson.
23. Covey, S. R. (2004). The 7 Habits of Highly Effective People : Powerful Lessons in Personal Change. New York : Free Press.
24. Wheelen, T. L., & Hunger, J. D. (2012). Strategic Management and Business Policy (Vol. 13). New York : Pearson.
25. Kim, W. C., & Mauborgne, R. (2015). Blue Ocean Strategy, Expanded Edition : How to Create Uncontested Market Space and Make the Competition Irrelevant. Boston : Harvard Business Review Press.
26. Asher, E.M. (2023). Application of Agile Management in Saudi Universities in Light of Global Models : A Proposed Framework. Journal of the College of Education.
27. Abu Bakr, A., & Abdullah, S. (2020). Degree of University Leadership Practices of Agile Management Dimensions and Their Relationship to Job Performance Effectiveness from the Perspective of Faculty Members at New Valley University. Educational Journal, 660-685.
28. Fitori, A. A. S., & Alsharif, H. A. (2023). Agile Management and Its Impact on Achieving High Employee Retention Practices : An Applied Study on Employees in the Telecommunications Sector (Libyana and Almadar Companies). Journal of Studies in Economics and Commerce, 42(42).

29. Dawoudi, T. (2017). The Impact of Internal and External Environmental Analysis on Strategy Formulation. Al-Baheth Journal, 05.
30. Skarna, B. K. (2010). Strategic Planning (Vol. 1). Amman : Dar Al-Maseera for Publishing and Distribution.
31. Bani Hamdan, K. M., & Idris, W. M. (2009). Strategy and Strategic Planning : A Contemporary Approach. Amman : Dar Al-Yazouri for Scientific Publishing and Distribution.
32. Harbi, H., & Al-Ghamdi, L.M. (2021). The Role of Agile Management in Project Success. Innovative Humanities, Social and Natural Research, Vision for a Prosperous Economy and a Better Future by 2030, Istanbul.
33. Mohammed, R.M., & Kartat, A. (2019). Requirements and Obstacles to Implementing Agile Management at King Khalid University. Global Journal of Economics and Business, 06(01).
34. Muqaymuh, S. (2025). Agile Management and Its Impact on Achieving Functional Creativity in Economic Institutions : A Case Study of the Algerian Electricity and Gas Distribution Company in Skikda (Algeria). Journal of Management and Economics Research, 05(02).
35. Hashmi, T., & Mahdi, O. (2019). Agile Management : Concepts and Practices—Lessons Learned from Toyota's Experience. Journal of Economic Growth and Entrepreneurship, 01(02).
36. Matar, A. J. (2024). The Role of Applying Agile Management in Developing Administrative Efficiency of Employees (A Field Study at a Private University in Jeddah, Saudi Arabia). International Journal for Publishing Research and Studies, 05.
37. Ben Habib, A. R. (2009). Economics and Business Administration. Algeria : University Press Office.
38. Al-Shahri, AMY, & Aqili, OM (2023). The Role of Agile Management in Supporting Knowledge Management Projects in Saudi Government Agencies (A Practical Review). International Journal for Publishing Research and Studies, 04(47).
39. Al-Qahawi, L. A. (2013). Knowledge Management Strategy and Organizational Goals (Vol. 1). Amman : Dar Al-Hamed for Publishing and Distribution.
40. Masada, M. A. (2015). Organizational Management : A Holistic Perspective (Vol. 02). Amman : Dar Al-Maseera for Publishing and Distribution.
41. Arabi, M. H. (2015). Strategic Business Management. Algeria : University Press Office.
42. Musallat, M., & Al-Otaibi, F. (2024). The Role of Agile Management in Improving Job Performance—An Applied Study on the Ministry of Health in Saudi Arabia. Journal of Educational and Psychological Sciences. Arab Foundation for Science and Research Publishing, 08(05).
43. Addi, N. D. (1998). Economics of the Enterprise (Vol. 2). Algeria : Dar Al-Mohamadiya for General Publishing

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Liquidity Position of Selected Pharmaceutical Companies in India -A Case Study

Manish Seth
Dr, Assistant Professor
Department of Commerce, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh (A Central University)
India 495009

Rashmi Tiwari
Research Scholar
Department of Commerce, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh (A Central University)
India
E-mail: dubeyrashmi046@gmail.com

Praveen Kumar
Research Scholar
Department of Commerce, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh (A Central University)
India

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Liquidity, selected pharmaceutical companies, case study.

Abstract

This study compares the short-term liquidity of three leading Indian pharmaceutical firms Sun Pharmaceutical Ltd., Cipla Ltd., and Divi's Laboratories over five financial years (2019–20 to 2023–24). Using secondary data from company annual reports, we compute current, quick, and cash ratios, examine trends, and apply one-way ANOVA to test inter-firm differences. Results show Divi's Laboratories holds the strongest average liquidity (current ratio 6.81; quick ratio 4.78), Cipla ranks second with stable performance (current 4.32; quick 3.10 and the lowest variability), while Sun Pharma trails on levels (current 1.76; quick 1.37) but records the fastest improvement over time. ANOVA indicates significant differences across firms for current and quick ratios ($p<0.05$), but not for cash ratio ($F=3.09$, $p=0.08$). Cash positions are highest yet volatile at Divi's (mean 0.66), modest and slightly declining at Cipla (0.07), and low but improving at Sun Pharma (0.04). The findings suggest targeted actions: Sun Pharma should accelerate receivables recovery and inventory turnover to lift baseline liquidity; Cipla should rebuild cash buffers without sacrificing operating stability; Divi's should smooth cash-flow swings and deploy surplus liquidity efficiently. Overall liquidity strength ranks Divi's > Cipla > Sun Pharma, with Sun on an improving trajectory.

Citation. Seth M., Tiwari R., Kumar P. (2025). Liquidity Position of Selected Pharmaceutical Companies in India - A Case Study. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 613–626. https://doi.org/10.56352/sei/8.11.48

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.05.2025	Accepted: 11.08.2025	Published: 05.09.2025 (available online)

Introduction:

India's pharmaceutical industry has established itself as a significant player on the global stage in recent years. The company is renowned for its ability to provide affordable, high-quality generic drugs, vaccines, and active pharmaceutical ingredients (APIs). When it comes to providing solutions for healthcare on a global scale, Indian pharmaceutical companies play a significant role due to their robust production infrastructure and the growing domestic and international markets they serve. It is a significant provider of generic pharmaceuticals, accounting for more than twenty percent of the global market in terms of volume, and it satisfies approximately sixty-two percent of the demand for vaccinations across the globe. The aforementioned are some of the most important aspects of this sector. In addition to being a significant producer of active pharmaceutical ingredients (APIs), the nation is home to more than 3,000 companies and 10,500 facilities, making it the nation that has the largest number of US FDA-approved manufacturing plants that are located outside of the United States. The domestic pharmaceutical industry is presently valued at $50 billion, and it is expected that it will increase to $130 billion by the year 2030. Some of the causes that are driving the expansion of the industry include increasing incomes, urbanization, and greater access to healthcare. For the purpose of developing products that go beyond generics, Indian companies are increasing their investments in research and development. The majority of their efforts are focused on biosimilars and complex formulations, particularly in therapeutic areas such as oncology and diabetic drug development. During the fiscal year 2023, the pharmaceutical business in India exported a total of $25.39 billion worth of products, the majority of which were shipped to the United States of America, as well as more than 200 other countries. This was a significant factor in India's rise to prominence as the "pharmacy of the world." Several measures, such as the output-linked incentive plan, have been implemented by the government in order to boost the amount of API that is produced locally and to attract investment from elsewhere.

Sun Pharmaceutical Ltd.:-The company that is now known as Sun Pharma was initially formed in 1983 by Dilip Shanghvi under the name Sun Pharmaceutical Industries Limited. Sun Pharma is the current name of the company. It is possible to locate the headquarters of the corporation in Mumbai, Maharashtra, which is the most important financial center in India. Formulations and active pharmaceutical ingredients (APIs) are widely acknowledged to be among the most specific areas of expertise that Sun Pharma possesses. The focus of this method is on a wide variety of therapies, both acute and chronic. Its therapeutic segments include psychiatry, anti-infectives, neurology, cardiology, orthopedics, diabetology, gastroenterology, ophthalmology, nephrology, urology, dermatology, gynecology, respiratory, cancer, dental, and nutritional medicines. These therapeutic segments are comprised of approximately three thousand molecules of high quality.

Divis Labs:-Beginning in 1990, Divi's Laboratories was established with the express intention of doing research and development in the field of life sciences. The primary focus of the company is on the creation of cutting-edge and creative manufacturing processes for pharmaceutical intermediaries and other active pharmaceutical ingredients (APIs).

Cipla Ltd:-Dr. K. A. Hamied established Cipla Limited in 1935, and it has since grown to become one of the most successful global corporations in India in the fields of biotechnology and pharmaceuticals. The production of active pharmaceutical ingredients (APIs) and formulations takes place at 34 cutting-edge Cipla sites located all over the country. Cipla is primarily responsible for the development of pharmaceuticals that are intended to treat conditions such as depression, obesity, cardiovascular illnesses, arthritis, and diabetes.

Review of Literature:

Liquidity management is an essential component of financial stability, especially in sectors characterized by elevated operational expenses and variable cash flows, such as the pharmaceutical business. Liquidity is typically evaluated using ratios including the current ratio, quick ratio, and cash ratio (Pandey, 2015). Indian pharmaceutical companies experience several challenges in liquidity management, such as price control restrictions, competition from generic drugs, extended gestation times for new pharmaceuticals, and dependence on foreign money for raw materials. (Sood, 2016). After researching a selection of pharmaceutical firms in India, Nair and Iyer concluded that although the majority of these companies keep a solid current ratio, their quick ratio is frequently lower, indicating that they rely on their inventories for short-term liquidity. Particularly in the event of unanticipated changes in the market or in regulatory policies, which could result in disruptions to cash flow, this can be a risky endeavor (Nair and Iyer 2017). These ratios offer insights into a company's capacity to fulfill its short-term obligations using its short-term assets. Liquidity management is becoming more important for pharmaceutical companies due to their dependence on ongoing research and development (R&D), regulatory approvals, and raw material expenses, which can entail lengthy manufacturing cycles and payments that are delayed (Patnaik, 2018). For pharmaceutical firms, research and development is not only a big investment, but it also plays an essential part in ensuring the company's continued profitability over the long term. Since the expense of research and development is frequently incurred before the product generates any revenue, the researcher states that this spending has a direct impact on the liquidity of pharmaceutical organizations. At the same time that they continue spending money on research and development for future expansion, Indian pharmaceutical companies, especially smaller ones, have the difficulty of maintaining acceptable liquidity levels (Singh and Yadav 2019). Furthermore, variations in demand, particularly in export markets, might impact cash flows. Consequently, firms with inadequate liquidity may find it challenging to meet operational expenses, finance new initiatives, or adapt to abrupt market fluctuations (Bansal, 2020). Research has analyzed the liquidity status of several pharmaceutical firms. Ravindra et al. (2020) look at how well some drug companies make money and how easy it is for them to get cash. The liquidity position of the industry is affected by various elements, such as international rules, export needs, and the cost structure associated with research and development and compliance. Pharmaceutical firms in India, particularly within the generic sector, frequently maintain a conservative liquidity policy given intense competition and government regulation (Sharma, 2020). The current and quick ratios are frequently used to assess liquidity in pharmaceutical companies. However, these statistics alone may not offer a comprehensive understanding of a company's liquidity, particularly when firms maintain significant assets in inventories or receivables. (Ghosh & Das, 2020). The main goal of this study was to find out how well the biggest drug companies are doing and compare them to each other. Then, based on their profitability or liquidity performance, they were ranked. A case study investigated the liquidity of companies that include Sun Pharmaceutical and Cipla, revealing that although they sustained sufficient liquidity levels, their elevated receivables and inventory management could render them vulnerable to liquidity risks in unfavorable market conditions. Conversely, organizations such as Dr. Reddy's Laboratories demonstrated superior working capital management, enhancing their robust liquidity position (Kumar and Kaur 2021). Patel and Singh (2021) revealed that pharmaceutical companies possessing strong intellectual property rights portfolios—comprising patents, trademarks, and copyrights—experience competitive advantages, including market exclusivity and enhanced profitability, which ultimately foster enduring financial success and value generation. Patel and Rao (2021) discovered that companies that strictly comply with regulatory requirements—encompassing manufacturing practices, marketing laws, and medication safety—enhance operational efficiency, mitigate risks, and improve financial performance, thereby strengthening their competitiveness and reputation in the industry. Dheepalakshmy and Angelamary (2024) performed a comparative analysis of Sun Pharmaceutical Industries Limited and Dr. Reddy's Laboratories Limited over five years, highlighting how the systematic application of financial ratios uncovers both strengths and weaknesses, thereby facilitating strategic planning for investors and stakeholders confronting industry challenges like regulatory changes and global competition. India's pharmaceutical sector ranks among the largest globally, recognized for its generic medications that substantially impact the international market. The Indian Brand Equity Foundation (IBEF, 2024) states that India holds the third position in pharmaceutical manufacturing by volume. Adopting a sectoral perspective, Gautam and Madhavi (2024) assessed various pharmaceutical companies from 2017 to 2021 through profitability, liquidity, and solvency ratios. They found generally robust liquidity and solvency but identified inconsistencies in profitability among firms. They recommend improving weak financial ratios and minimizing operational costs to ensure long-term sustainability and enhance investor attraction. Collectively, these studies demonstrate the complex characteristics of financial success within the Indian pharmaceutical sector, influenced by innovation, regulatory adherence, and strategic analysis based on educated decision-making.

Objective For the Study: -

- To evaluate the liquidity position of selected pharmaceutical companies listed on major stock exchanges like the NSE.
- To compare the liquidity positions of different pharmaceutical companies.
- To analyze trends in liquidity over a specified period.
- To provide actionable recommendations based on findings from the analysis.

Scope of the Study: -

The provision of medical products and services is the most fundamental requirement in contemporary society. The liquidity performance of the company is of interest and concern not only to the owners, shareholders, creditors, governments, and other stakeholders of the firm, but also to the general welfare and growth of civilization as a whole. Thus, it is vital to be aware of the company's Liquidity performance since it is of importance and concern to all of these groups. The issue of "Liquidity position of selected pharmaceutical companies in India—A case study" has to be investigated to fulfill the requirements that have been identified. Examples of the sorts of financial ratios that has been utilized in this investigation include the current ratio, Quick ratio and Cash ratio. Through the examination of the trend of financial ratios, the purpose of the research is to assess the financial standing of the organizations chosen throughout the past five fiscal years (FY19-FY23).

Research Methodology: -

Sample size: -The focus of this paper is on three companies chosen from a group of ten major Indian pharmaceutical companies. Sun Pharma Ltd., Divi's Lab., and Cipla Ltd. are some of these. These companies has been selected based on market capitalization .

Period of the study: -This study covers a period of 5 years from the financial year 2019-20 to 2023-24.

Data collection methods: - To research, compile, and tabulate the annual reports of the firm for the past five years, the current investigation heavily relies on secondary sources of information. The data has been collected from a few selected sources, including the annual reports of the company, the internet, and the necessary financial data collected from the official website of the companies, as well as other websites.

Hypotheses

Hypothesis 1

Ho – There is no significant difference between current ratio of selected companies.

H_1 – There is significant difference between current ratio of selected companies.

Hypothesis 2

Ho – There is no significant difference between Quick ratio of selected companies.

H_2 – There is significant difference between Quick ratio of selected companies.

Hypothesis 3

Ho – There is no significant difference between Cash ratio of selected companies.

H_3 – There is significant difference between Cash ratio of selected companies.

Limitation of the study: -Most of the information in the study comes from secondary sources, such as audited annual reports. If the audited accounts have any mistakes or unclear information, they could give results that are misleading. The conclusions can not be as complete as they could be because the research only looks at data from the last five years (2019–2024).

Data Analysis

Liquidity ratio: A liquidity ratio is an indicator of whether a company's current assets will be sufficient to cover the company's short-term debt commitments when they become due, and it is a major measure of financial health. Liquidity can be measured using numerous ratios :-

Current Ratio:-The current ratio, or working capital ratio, assesses a company's capacity to fulfill its short-term liabilities due within one year. The ratio evaluates the weight of total current assets in relation to total current liabilities. It reflects a company's financial stability and ability to optimize its present assets' liquidity to fulfill obligations and liabilities. The formula for the current ratio can be utilized to assess a company's liquidity.

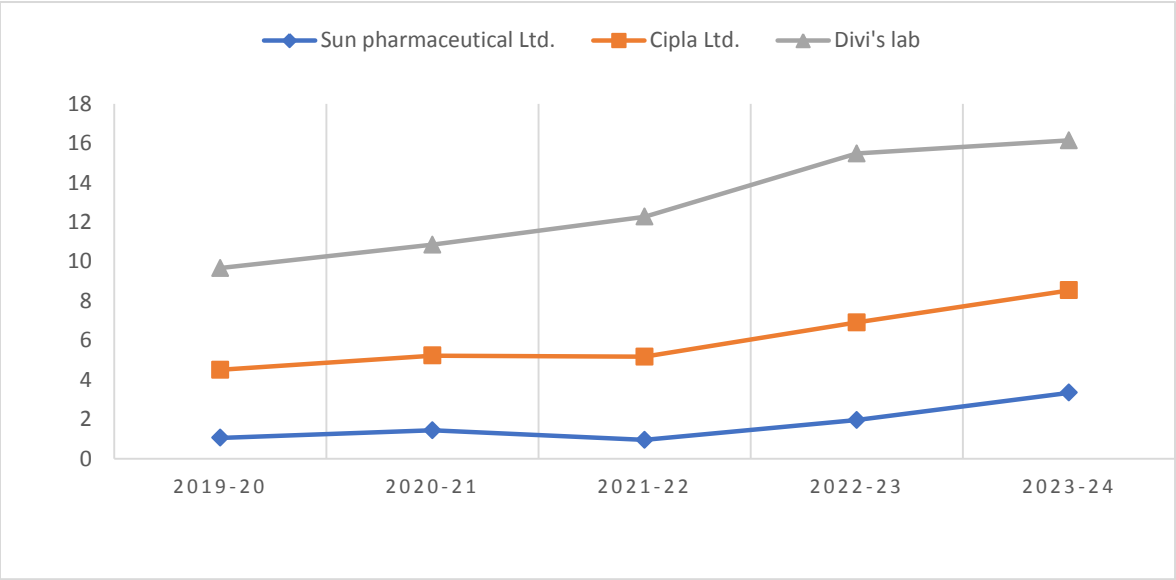
Current Ratio = Current Assets / Current Liabilities

Table 1: Current Ratio of the Selected Pharmaceutical Companies

Year	Sun Pharmaceutical Ltd.	Cipla Ltd.	Divi's lab
2019-20	1.07	3.44	5.16
2020-21	1.44	3.79	5.63
2021-22	0.96	4.22	7.10
2022-23	1.97	4.95	8.57
2023-24	3.35	5.19	7.60
Mean	1.76	4.32	6.81
SD	0.98	0.75	1.41
CV %	55.49	17.25	20.65
CAGR%	0.26	0.09	0.08

Source: - Compiled and computed from various Annual reports of selected Pharmaceutical Companies

Chart 1: Current Ratio of the Selected Pharmaceutical Companies



Interpretation

An evaluation of the current ratio data from 2019–20 to 2023–24 for Sun Pharmaceutical Ltd., Cipla Ltd., and Divi's Laboratories reveals significant differences in their short-term liquidity positions. Based on the mean values, Divi's Laboratories holds the strongest average current ratio at 6.81, indicating a robust ability to cover short-term obligations, followed by Cipla Ltd. with 4.32, while Sun Pharmaceutical Ltd. lags behind with a comparatively lower mean of 1.76, reflecting tighter liquidity management. In terms of standard deviation, which reflects the extent of fluctuations, Divi's Lab exhibits the highest variability at 1.41, whereas Sun Pharma and Cipla show lower deviations of 0.98 and 0.75 respectively, suggesting greater consistency in Cipla's liquidity levels. The coefficient of variation (CV), which measures relative consistency, further supports this observation, as Cipla Ltd. maintains the lowest CV of 17.25%, implying the most stable liquidity pattern among the three, while Sun Pharma's CV of 55.49% indicates substantial inconsistency. Although Divi's Lab demonstrates strong liquidity, its CV of 20.65% suggests moderate variability. Regarding growth, the Compound Annual Growth Rate (CAGR) shows that Sun Pharmaceutical Ltd. has achieved the most significant improvement over the five-year period with a CAGR of 0.26, compared to Cipla's 0.09 and Divi's 0.08, reflecting a notable upward trend in its current ratio.

ANOVA TEST OF CURRENT RATIO

Ho – There is no significant difference between current ratio of selected companies**.**

H_1 – There is significant difference between current ratio of selected companies.

SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
Sun Pharmaceutical Ltd.	5	8.79	1.75	0.95		

Cipla Ltd.	5	21.59	4.31	0.55		
Divi's lab	5	34.05	6.81	1.97		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	63.82	2	31.91	27.47	3.31695E-05	3.88
Within Groups	13.94	12	1.16			
Total	77.76	14				

Source : Author's calculation through EXCEL

**** at 5% significance level**

A one-way ANOVA test has been applied to assess whether the average current ratios of Sun Pharmaceutical Ltd., Cipla Ltd., and Divi's Laboratories differ significantly over the five-year period from 2019–20 to 2023–24. The ANOVA test for the current ratio shows that the calculated F-value (27.47) is greater than the F critical value (3.88), and the p-value (0.000033) is less than the 0.05 significance level. This means there is a statistically significant difference in the mean current ratios among Sun Pharmaceutical Ltd., Cipla Ltd., and Divi's Lab. Therefore, the null hypothesis is rejected, and it is concluded that the current ratios of the selected companies are not the same.

Quick Ratio (Acid-Test Ratio): The quick ratio is a financial metric that assesses a company's capacity to meet its current liabilities without liquidating inventory or securing extra funding. It is a more cautious metric than the current ratio, which encompasses all current assets. The quick ratio is determined by dividing a company's most liquid assets by total current liabilities, omitting some assets such as prepaid expenses and inventories. An elevated ratio signifies improved liquidity and fiscal well-being.

Quick Ratio = Quick Assets / Current Liabilities

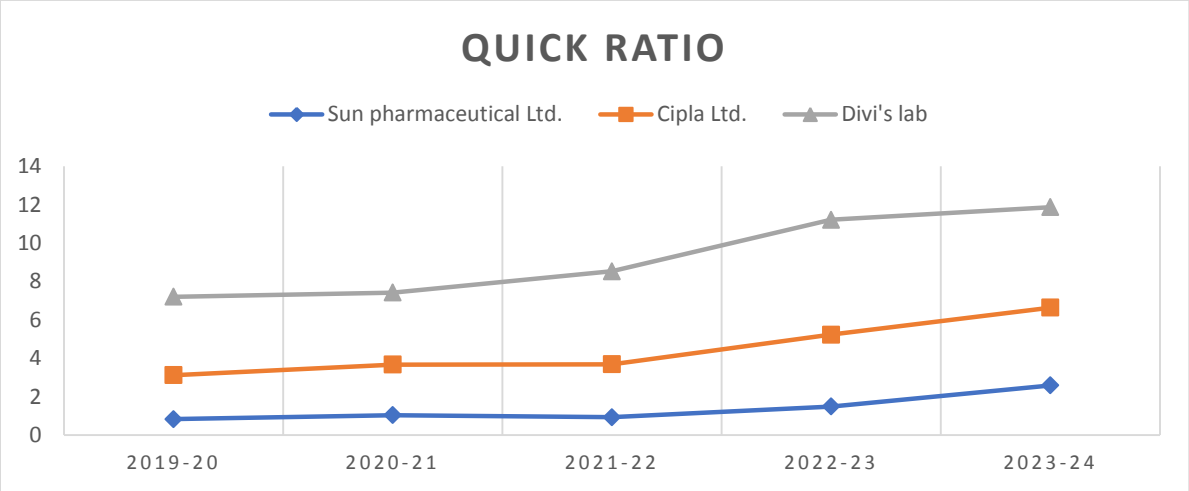
Table 2: Quick Ratio of the Selected Pharmaceutical Companies

Year	Sun Pharmaceutical Ltd.	Cipla Ltd.	Divi's lab
2019-20	0.83	2.29	4.09
2020-21	1.03	2.64	3.75
2021-22	0.93	2.77	4.84
2022-23	1.49	3.74	5.99
2023-24	2.58	4.05	5.23
Mean	1.37	3.10	4.78
SD	0.72	0.76	0.90

CV%	52.62	24.44	18.73
CAGR%	25.48	12.08	5.06

Source: - Compiled and computed from various Annual reports of selected Pharmaceutical Companies

Chart 2: Quick Ratio of the Selected Pharmaceutical Companies



Interpretation:

The analysis of the quick ratio reveals distinct liquidity positions among the selected pharmaceutical companies. On average, Divi's Laboratories (4.78) has maintained the highest quick ratio, indicating a stronger ability to meet short-term obligations without relying on inventory, followed by Cipla Ltd. (3.10) and Sun Pharmaceutical Ltd. (1.37). In terms of stability, the standard deviation values suggest that Sun Pharma (0.72) and Cipla (0.76) experienced moderate year-to-year fluctuations, while Divi's Lab (0.90) has showed relatively higher variability despite having the highest mean. The coefficient of variation further emphasizes this pattern, with Sun Pharma (52.62%) showing the highest relative volatility in liquidity, Cipla (24.44%) maintaining moderate stability, and Divi's Lab (18.73%) displaying the most consistent quick ratio performance over the period. Regarding growth trends, the compound annual growth rate (CAGR) indicates that Sun Pharma has achieved the fastest improvement in quick ratio (25.48%), followed by Cipla (12.08%), while Divi's Lab (5.06%) has shown slower but steady growth. Overall, the results highlight that Divi's Lab leads in liquidity strength, Cipla balances high liquidity with stability, and Sun Pharma, though starting from a lower base, has shown the most significant improvement over the five-year period.

ANOVA TEST OF QUICK RATIO

Ho – There is no significant difference between Quick ratio of selected companies.

H_a – There is significant difference between Quick ratio of selected companies.

SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
Sun Pharmaceutical Ltd.	5	7.04	1.40	0.68		
Cipla Ltd.	5	15.60	3.12	0.55		
Divi's lab	5	23.03	4.60	1.24		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	25.60	2	12.80	15.45	0.000477823	3.88
Within Groups	9.93	12	0.82			
Total	35.53	14				

Source : Author's calculation through EXCEL

**** at 5% significance level**

To examine whether there is a statistically significant difference in the mean quick ratios among the three selected pharmaceutical companies Sun Pharmaceutical Ltd., Cipla Ltd., and Divi's Laboratories a one-way ANOVA has been conducted. The ANOVA results for the quick ratio shows that the calculated F-value (15.45) is much higher than the critical F-value (3.88) and the p-value (0.00048) is well below 0.05. This indicates a statistically significant difference in the quick ratios among the selected companies. Therefore, the null hypothesis (Ho) is rejected, and it is concluded that the quick ratio varies significantly between Sun Pharmaceutical Ltd., Cipla Ltd., and Divi's Lab.

Cash Ratio: The cash ratio is a liquidity measure that assesses a company's ability to meet short-term obligations using only cash and cash equivalents. It is calculated by dividing the total cash and near-cash securities by total current liabilities. This ratio is considered more conservative than other liquidity measures as it focuses solely on the most liquid assets. A cash ratio greater than one indicates that a company has more cash than current debts, while a ratio less than one suggests more short-term debt than cash. Lenders, creditors, and investors utilize the cash ratio to evaluate a company's short-term financial risk.

Cash Ratio = Cash + Cash Equivalents / Current Liabilities

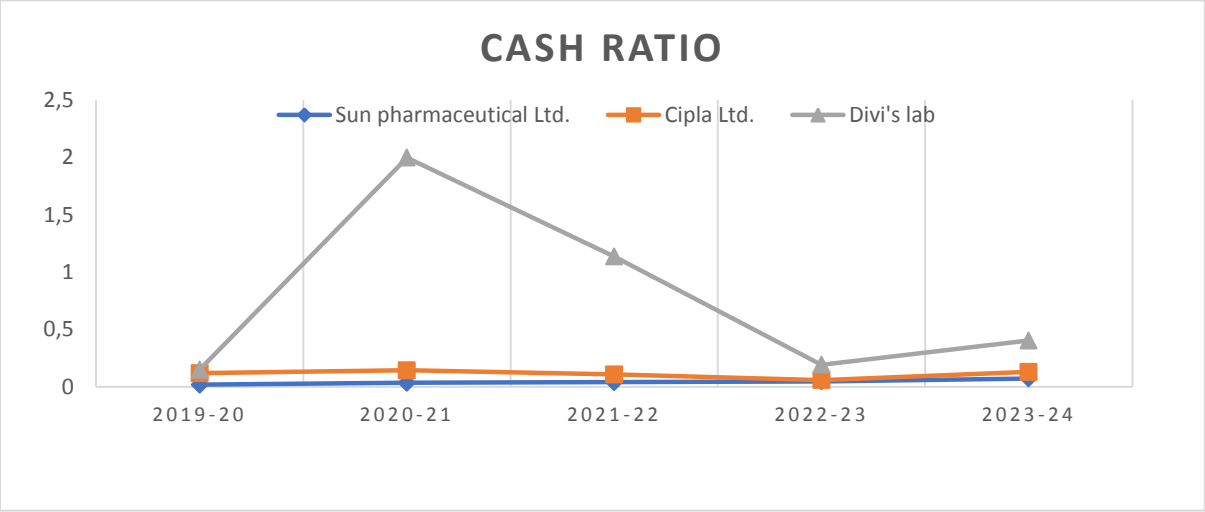
Table 3: Cash Ratio of the Selected Pharmaceutical Companies

	Sun Pharmaceutical Ltd.	Cipla Ltd.	Divi's lab
2019-20	0.02	0.10	0.03
2020-21	0.03	0.11	1.85
2021-22	0.04	0.07	1.03

2022-23	0.05	0.01	0.13
2023-24	0.07	0.06	0.27
Mean	0.04	0.07	0.66
SD	0.02	0.04	0.77
CV%	50.12	56.04	116.24
CAGR%	30	10	55

Source: - Compiled and computed from various Annual reports of selected Pharmaceutical Companies

Chart- 3: Cash Ratio of the Selected Pharmaceutical Companies



Interpretation

Table 3 presents the cash ratio of Sun Pharmaceutical Ltd., Cipla Ltd., and Divi's Laboratories for the period from 2019–20 to 2023–24. The mean cash ratio during this five-year period has been found 0.04 for Sun Pharmaceutical Ltd., 0.07 for Cipla Ltd., and 0.66 for Divi's Laboratories, indicating that Divi's Laboratories has maintained a significantly higher average cash position compared to the other two companies. The standard deviation, reflecting the extent of fluctuation in cash ratios, which is 0.02 for Sun Pharmaceutical Ltd., 0.04 for Cipla Ltd., and 0.77 for Divi's Laboratories. When measured in terms of relative volatility through the coefficient of variation (CV), Divi's Laboratories has showed the highest variability at 116.24%, whereas Cipla Ltd. and Sun Pharmaceutical Ltd. has CVs of 56.04% and 50.12% respectively. The Compound Annual Growth Rate (CAGR) of the cash ratio has been noticed 30% for Sun Pharmaceutical Ltd., indicating steady growth, whereas Cipla Ltd. has experienced a slight negative CAGR of -10%, and Divi's Laboratories has recorded the highest growth at 55% over the given period.

ANOVA TEST OF CASH RATIO

Ho – There is no significant difference between Cash ratio of selected companies.

H_3 – There is significant difference between Cash ratio of selected companies.

SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
Sun Pharmaceutical Ltd.	5	0.210	0.042	0.000		
Cipla Ltd.	5	0.350	0.070	0.001		
Divi's lab	5	3.315	0.663	0.594		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.23	2	0.61	3.09	0.08	3.88
Within Groups	2.38	12	0.19			
Total	3.61	14				

Source : Author's calculation through EXCEL

**** at 5% significance level**

To assess whether there is a statistically significant difference in the mean cash ratios among Sun Pharmaceutical Ltd., Cipla Ltd., and Divi's Laboratories, a one-way ANOVA has been conducted. The analysis resulted in an F-value of 3.09, which is lower than the F-critical value of 3.88. Additionally, the p-value is 0.08, which is greater than the significance level of 0.05. Based on these results, we fail to reject the null hypothesis, indicating that there is no statistically significant difference in the mean cash ratios among the three pharmaceutical companies at the 5% significance level. This means that although Divi's Lab has a visibly higher average cash ratio (0.663) compared to Cipla (0.070) and Sun Pharma (0.042), the differences are not statistically strong enough to conclude that their liquidity positions, based solely on cash reserves, are significantly different.

Findings:

1. Sun Pharmaceutical Ltd.

Sun Pharmaceutical Ltd. has the lowest average current ratio (1.76) of the three chosen pharmaceutical businesses for the five-year period from 2019–20 to 2023–24. This means that it has relatively less short-term liquidity. The company's current ratio, on the other hand, has experienced the highest Compound Annual Growth Rate (CAGR) of 26%, which means that it is slowly getting better at meeting its current obligations. Sun Pharma also had the lowest average quick ratio (1.37) and the largest relative volatility (CV = 52.62%), which shows that the company's liquid assets has not found always enough. Its quick ratio CAGR has been found 25%, which has the greatest of the three companies. This shows that it is making improvement in terms of liquidity without taking into account its inventories. The company's cash ratio has maintained at an average of 0.04 with a moderate spread (CV = 50.12%), and it became continually with a CAGR of 30%. The results of a one-way ANOVA has showed that there is statistically significant differences in the current and quick ratios between companies. This supports Sun Pharma's weaker but improving liquidity position. However, the differences in cash ratios has not statistically significant, which means that Sun Pharma's lower cash holdings are not statistically different from those of its others.

2.Cipla Ltd.:
Cipla Ltd. has maintained a comparatively stronger liquidity position than Sun Pharmaceutical Ltd. over the period, with an average current ratio of 4.32 and the lowest coefficient of variation (17.25%) among the three, indicating the most stable liquidity performance. While the growth rate in its current ratio has been found moderate (CAGR = 9%), stability remained a key strength. Its quick ratio averaged 3.10, the second highest of the group, with a CV of 24.44%, again reflecting consistency in maintaining adequate liquid assets. The quick ratio CAGR of 12% shows modest improvement over time. However, in terms of cash ratio, Cipla has posted a low average value of 0.07, with a CV of 56.04% and a marginally negative growth rate (-0.10), suggesting a slight decline in absolute cash holdings over the five years. ANOVA analysis has confirmed statistically significant variation in both the current and quick ratios among the companies, situating Cipla in a relatively stable and favorable liquidity position overall. However, cash ratio differences across companies has not reach statistical significance.

3. Divi's Laboratories Ltd.
Divi's Laboratories has consistently exhibited the strongest average liquidity levels in terms of both current ratio (6.81) and quick ratio (4.78) during the study period, reflecting a robust capacity to meet short-term obligations. Despite the strength, the company has showed moderate variability in these ratios, with CV values of 20.65% for current ratio and 18.73% for quick ratio. Growth in these measures was modest, with a CAGR of 8% for current ratio and 5% for quick ratio, indicating stability rather than significant expansion. In terms of cash ratio, Divi's Laboratories far outperformed its peers with a mean value of 0.66, although this figure has been accompanied by the highest volatility (CV = 116.24%) and the strongest growth rate (CAGR = 55%). ANOVA tests has confirmed statistically significant differences between companies in current and quick ratios but not in cash ratios, suggesting that although Divi's cash position is visibly stronger on average, the variation is not statistically significant at the 5% level.

Suggestions:

1. Sun Pharmaceutical Ltd.
Although Sun Pharmaceutical Ltd. has shown improvement in its liquidity ratios over the study period, its overall current and quick ratios remain lower than those of its peers. The company should aim to enhance its short-term financial strength by increasing the share of liquid assets in relation to current liabilities. Faster recovery of receivables and more efficient inventory turnover could contribute to this improvement. Since growth trends in these ratios are already positive, management can build on this momentum by adopting prudent debt policies and ensuring that repayment schedules are comfortably matched with available liquidity. Maintaining a larger cushion of cash or cash-equivalent assets would also help reduce financial strain during unexpected events.

2. Cipla Ltd.
Cipla Ltd. demonstrates a stable liquidity position, with consistent current and quick ratios over the five years. However, the gradual decline in its cash ratio highlights the need to focus on rebuilding cash reserves. This can be done by reviewing cash management strategies and considering low-risk, highly liquid short-term investments. Reducing working capital tied up in receivables and inventories without impacting production or distribution efficiency could also free up more cash. By preserving its stability while strengthening cash holdings, Cipla can further enhance its financial resilience.

3. Divi's Laboratories Ltd.
Divi's Laboratories exhibits the strongest average liquidity among the companies studied, yet its cash ratio fluctuates widely. To address this, the company should focus on smoothing cash flows by better coordinating inflows and outflows, and by holding a steady reserve of cash. As current and quick ratios are already high, the emphasis should be on efficient use of assets to avoid excess idle resources. Surplus liquidity could be invested in secure, short-term instruments to generate additional income without compromising the firm's flexibility.

Conclusion:

The comparative analysis of liquidity ratios namely current ratio, quick ratio, and cash ratio for Sun Pharmaceutical Ltd., Cipla Ltd., and Divi's Laboratories Ltd. over the five-year period from 2019–20 to 2023–24 reveals notable differences in their short-term financial strengths.

Divi's Laboratories consistently recorded the highest average current and quick ratios, indicating an exceptional ability to meet short-term obligations. Its significantly superior cash ratio further reinforces this strong liquidity profile, although higher volatility in cash holdings suggests variability in cash management practices. Cipla Ltd. has the second most company, with consistent and reasonably high current and quick ratios and the least amount of change between the three companies. But because its cash ratio is slowly going down, cash reserve management needs to be looked at more closely. Sun Pharmaceutical Ltd., despite starting from a comparatively weaker liquidity position, registered the most notable growth in both current and quick ratios over the study period, signifying a positive trend in improving its short-term financial capacity. Nevertheless, its absolute liquidity levels remain the lowest among the three. Overall, based on average ratio values, stability, and ability to cover short-term obligations, Divi's Laboratories holds the strongest liquidity position, followed by Cipla Ltd., while Sun Pharmaceutical Ltd. remains in a relatively weaker but steadily improving position. This ranking aligns with the findings and supports the research objectives of evaluating and comparing liquidity positions and trends across the selected pharmaceutical companies.

Conflict of Interest

The authors declare no conflict of interest. All observations, interpretations, and recommendations presented in this article are based on professional experience and research conducted independently.

References:

1. Pandey, I. M. (2015). Financial Management. Vikas Publishing.
2. Sheela K.(2015) A Study On Financial Performance Of Pharmaceutical Industry In India.
3. Sood, S. (2016). Factors Affecting Liquidity Position of Indian Pharmaceutical Firms. *Global Journal of Management and Business Studies*, 6(4), 34-42.
4. Nair, S., & Iyer, R. (2017). Liquidity Ratios and Profitability: A Study of Indian Pharmaceutical Firms. *Research Journal of Finance and Accounting*, 8(4), 29-35.
5. Pattnaik, R. K. (2018). Financial Performance and Liquidity Management of Indian Pharmaceutical Companies. *Indian Journal of Finance*, 12(1), 45-57.
6. Singh, A., & Yadav, R. (2019). R&D and Its Impact on Liquidity: Evidence from the Indian Pharmaceutical Sector. *International Journal of Pharmaceutical Sciences*, 12(2), 118-132.
7. Sharma, A. (2020). Analyzing the Financial Health of Indian Pharmaceutical Companies. *Journal of Business and Economics*, 14(3), 70-85.
8. Ghosh, A., & Das, A. (2020). Liquidity and Financial Performance of Pharmaceutical Companies in India. *International Journal of Economics and Finance*, 12(5), 123-135.
9. Bansal, M. (2020). A Study of Working Capital Management in Indian Pharmaceutical Companies. Journal of Financial Economics, 18(3), 63-75.
10. Ravindra, D. P. S., Satyavathi, M. M., Ramesh, D. S., Sowjanya, M. M., & Tejaswini, L.(2020). Comparative Analysis of Financial Performance of Selected Pharmaceutical Companies in India. International Journal of Pharmaceutical Research, 12(3), 3572-3582.
11. Kumar, S., & Kaur, P. (2021). A Case Study on Liquidity Management of Selected Indian Pharmaceutical Companies. Indian Journal of Financial Studies, 9(1), 54-65.
12. Arshad, M. H., & Shehzad, F. (2021). The impact on Key Performance Indicators after Merger & Acquisition.
13. Bianchi, J., & Bigio, S. (2022). Banks, liquidity management, and monetary policy. Econometrica, 90(1), 391-454. https://doi.org/10.3982/ECTA16599.
14. McKinsey & Company. (2022). *India Pharma 2030: A Visionary Approach.* Export-Import Bank of India (EXIM Bank). (2023). *Indian Pharmaceutical Industry Export Report.*

15. India Brand Equity Foundation (IBEF). (2023). *Indian Pharmaceuticals Industry Report.* Retrieved from the IBEF website. (https://www.ibef.org/)
16. Department of Pharmaceuticals (DOP), Ministry of Chemicals and Fertilizers. (2023). Annual Report.
17. Indian Brand Equity Foundation (IBEF). (2024). Pharmaceutical Industry in India. Retrieved from https://www.ibef.org
18. Amimakmur, S. A., Saifi, M., Damayanti, C. R., & Hutahayan, B. (2024). Exploring the Nexus of Dividend Policy, Third-Party Funds, Financial Performance, and Company Value: The Role of IT Innovation as a Moderator. Journal of Risk and Financial Management, 17(5), 210. https://doi.org/10.3390/jrfm17050210
19. https://corporatefinanceinstitute.com
20. https://groww.in
21. https://www.investopedia.com
22. https://corporatefinanceinstitute.com
23. https://corporatefinanceinstitute.com
24. https://sunpharma.com
25. https://www.cipla.com
26. https://www.divislabs.com

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of the Research Article

Archaeological Summer Schools as Pedagogical Platforms: Practical Integration of Field Research, Heritage Education, and Cultural Identity Formation in Contemporary Azerbaijan

Musa Mursaquliyev
Director, Keshikchidagh State Historical-Cultural Reserve
Azerbaijan
Email: mursaqulov@gmail.com

Saadat Aliyeva
PhD in Pedagogy
Director, Avey State Historical-Cultural Reserve
Azerbaijan
E-mail: mursaqulova@gmail.com
ORCID: https://orcid.org/0000-0002-5370-3178

Shamil Najafov
PhD in History, Associate Professor
Institute of Archaeology and Anthropology, Azerbaijan National Academy of Sciences
Azerbaijan
Email: shamil_necefov@mail.ru
ORCID: https://orcid.org/0000-0001-8834-7188

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords archaeological education, cultural heritage, fieldwork, pedagogy, summer schools, Azerbaijan

Abstract

he integration of archaeological research into educational practice has emerged as a strategic priority in fostering awareness of cultural heritage among younger generations. Strengthening students' engagement with the ancient history of their homeland requires direct exposure to the historical geography of early human settlements and the systematic promotion of archaeological monuments—particularly at a time when unsubstantiated claims regarding heritage sites are increasingly prevalent.

Educational tours and field-based programs at archaeological sites, many of which represent recently discovered monuments offering novel insights to scholarship, provide significant pedagogical and scientific benefits. Conducted within open-air "archaeoparks," these initiatives function as immersive learning laboratories that connect theoretical instruction with practical experience. Nevertheless, gaps persist in history curricula and teaching materials, particularly in the coherent and outcome-oriented presentation of ancient and medieval periods. A comprehensive, systematized approach to lesson design and delivery is therefore critical for achieving deeper student competencies.

Archaeological summer schools have demonstrated considerable success in addressing these gaps. By embedding creativity-driven pedagogical methods, these schools enhance student innovation, reflective thinking, and active participation. Structured scientific-practical modules, including masterclasses, excavation-based training, and guided site visits, enable students to develop key cognitive skills such as analogical reasoning, pattern recognition, and critical analysis. Through this blend of educational and experiential learning,

archaeological summer schools not only enrich academic training but also strengthen cultural identity and the promotion of heritage preservation.

Citation. Mursaquliyev M., Aliyeva S., Najafov Sh. (2025). Archaeological Summer Schools as Pedagogical Platforms: Practical Integration of Field Research, Heritage Education, and Cultural Identity Formation in Contemporary Azerbaijan. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 627–635. https://doi.org/10.56352/sei/8.11.49

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.05.2025 | Accepted: 11.08.2025 | Published: 05.09.2025 (available online)

Introduction

In recent years, a new term has emerged in archaeological practice and theoretical science: *archaeological summer school*. The establishment of such schools, including the development of their curricula, selection of participants, formation of the audience, and definition of their scientific direction, must be conducted professionally and systematically. Archaeological summer schools serve as educational and cultural initiatives aimed at promoting the discipline of archaeology among secondary and university students, advancing the study of ancient history, publicizing our tangible cultural heritage, and contributing to the identification and recognition of archaeological monuments.

In Azerbaijan, especially in recent years, archaeological summer schools have seen a growing audience, supported by the formation of professional teaching and training teams in this field. The primary objective is, naturally, to study the earliest traces of our historical memory and to disseminate this knowledge more widely among the younger generation. However, a key aspect is not only the study of ancient heritage but also the inclusion of archaeological, historical, and architectural monuments from various historical periods as subjects of academic inquiry and instruction.

The organization and direction of archaeological summer schools may involve one or several institutions and research centers. For this purpose, the coordinating institution must establish effective scientific oversight and ensure the orderly execution of fieldwork. This is particularly crucial because a substantial part of archaeological summer school activities consists of outdoor research, including archaeological excavations (see Figure 1).

An *archaeological summer school* is a structured program that focuses on the instruction of archaeology in outdoor field conditions, combining practical training with the theoretical knowledge acquired through formal education. It aims to bridge classroom learning and field application by revisiting and reinforcing theoretical concepts through the material-cultural remains uncovered during archaeological excavations.

The foundation of an archaeological summer school lies in the synthesis of information obtained from the study of archaeology as a scientific discipline—particularly ancient and medieval history in secondary school curricula and archaeology courses in university-level programs—with hands-on experience in open-air excavation environments. In secondary school history textbooks, archaeological excavations are generally covered within narrow limits. Only a small portion of the findings from excavations conducted in the country or globally is conveyed to students. Some recent archaeological excavations, particularly those involving newly discovered monuments, caves, open-air campsites, settlement sites (both urban and rural), necropolises, fortresses, cyclopean structures, places of worship, and shelters—although not presented in full depth—are partially introduced to students. Naturally, providing complete and detailed information on all such discoveries would considerably increase the academic load and risk overwhelming students with excessive archaeological detail.

Figure 1. Students of the Archaeological Summer School at the Qarasoy Kurgans (2023, Keşikçidağ State Historical and Cultural Reserve, Aghstafa District)

What is an Archaeological Summer School?

At the university level, archaeology is taught for a limited duration within history departments, while students from non-history faculties receive only a brief introduction to historical subjects, with minimal reference to archaeological methods or findings. Nonetheless, students are exposed to a degree of information on archaeological excavations and material-cultural heritage (see Figure 2).

Archaeological summer schools serve as platforms where theoretical knowledge acquired in both secondary and higher education is revisited and integrated within the context of actual field excavations. Their objective is to reinforce classroom-based learning with practical experience, deliver knowledge directly at the excavation site, and demonstrate that pre-written history can only be understood through archaeological sources [1].

Structure and Pedagogy of the Archaeological Summer School

An archaeological summer school must be based on a pre-established academic workload and curriculum. The participants should form a motivated and disciplined audience, capable of adapting to outdoor training conditions. This audience is not limited to students, university faculty, or schoolteachers. It may also include volunteers; young professionals working in scientific, medical, industrial, and public service sectors; staff from institutions and enterprises; employees of history and ethnography museums, historical-cultural and nature reserves; personnel from youth centers; educators; and representatives from heritage protection and restoration services, among others.

The archaeological summer school is structured around theoretical instruction, practical workshops, hands-on training, and masterclasses—all centered on the excavation process itself.

Figure 2. Students and instructors during an open-air archaeological lesson

Archaeological Summer School and Education: Practical Integration

The collaborative efforts of summer school participants—spanning the domains of school-community, school-family, school-archaeologist, and school-educator cooperation—create favorable conditions for effective educational reform and practical integration. These collaborative relationships are among the core criteria for ensuring the quality of education within the archaeological summer school framework.

When assessing the effectiveness of the summer school's operations, one of the key indicators is the level of awareness and engagement achieved among the participants. Transforming them into active stakeholders in the learning process is central to the leadership and management policies of the school. These considerations are not limited to theoretical or scientific perspectives but are rooted in practical evaluation and real-world implementation [1].

Two core indicators define teaching efficiency in archaeological summer schools: **time** and **value**. If higher-quality learning outcomes can be achieved using fewer resources and less time compared to traditional methods, the process is considered efficient. Productivity, in this context, is measured by the ratio of learning outcomes to the pedagogical effort invested. In other words, if greater instructional effectiveness and learning quality are attained with minimal effort, the result is deemed productive.

Therefore, when evaluating innovation within archaeological summer schools, **efficient learning** and **high-quality practical training** are considered primary indicators. This implies that the innovations implemented not only enhance the productivity of learning but also increase the overall efficiency of the educational process (see Figure 3).

Archaeological summer schools also represent the emergence of new educational content and forms—ranging from teaching materials, academic curricula, and textbooks to knowledge systems and innovative educational products or services.

Figure 3. Field-based archaeological masterclasses

Visualization and Creative Transformation of Knowledge

A core principle of modern education lies in reinforcing theoretical knowledge acquired in both secondary and higher education with tangible demonstrations, transforming this knowledge into creative competencies. Instructional programs in educational institutions that foster creativity stimulate innovative processes during archaeological summer schools. Practical coordination, direct observation, and visits to archaeoparks or active excavation sites enable students to draw analogies, transfer ideas creatively and laterally from one context to another, integrate knowledge across disciplines, generate unconventional ideas, anticipate overarching frameworks, and analyze diverse cognitive approaches [1, pp. 234–235].

Observing archaeological excavations and visiting archaeoparks within the summer school context provides a multidimensional archaeological experience. It allows students to engage with the content actively, supports the evaluation of creative activities, and motivates participants to articulate their perspectives on the process. As part of the curriculum, students, volunteers, and participants gain firsthand exposure to ancient tools—made of stone, bone, or metal—as well as diverse ceramic artifacts, ornaments and beads fashioned from precious and semi-precious stones (such as agate, jasper, opal, aragonite, basalt, etc.) and various metals (iron, gold, bronze, etc.). They also observe examples of weaponry (arrowheads, spear tips, battle axes, swords, defensive arms, etc.). This live interaction not only piques interest but also stimulates logical reasoning and critical thinking skills [11, 56 p.].

The Role of Archaeological Summer Schools in Promoting Cultural Heritage

Archaeological summer schools play a significant role in the promotion and dissemination of tangible cultural heritage. Overall, they fulfill three core functions: integrating education and science, facilitating practical field experience in education, and promoting awareness and recognition of material-cultural heritage. While the first two have been addressed earlier, the third is of particular importance, as it focuses on raising public awareness of archaeological and historical monuments.

The primary focus of archaeological summer school audiences is the excavation site itself. When participants arrive at the excavation area, the archaeologist plays a crucial introductory role by welcoming them and providing

background on the site, including its historical, archaeological, and sometimes architectural significance, and explaining why this specific location was selected for excavation [13, pp. 51–52]. This constitutes the initial phase.

Subsequently, participants are introduced to the excavation area. At this stage, it is important to note that the field archaeologist assumes multiple roles: as a guide, an informant, a practical instructor, and a lecturer in an open-air classroom setting [4]. They must engage the audience effectively, spark interest in the excavation work, and inspire curiosity. The archaeologist should respond to participant questions with enthusiasm, provide accurate information, and convey comprehensive insights into the archaeological-historical context of the site.

Moreover, the archaeologist should explain the typologies of monuments, the chronological classification of habitation and burial sites, the categorization and comparative analysis of discovered material-cultural remains, and relevant analogies (see Figure 5). The archaeologist must also guide participants in conducting supervised excavations, facilitate initial field documentation of the findings, and oversee this process with professional diligence [14, pp. 42–43].

Figure 4. Familiarization with an archaeological monument

Naturally, masterclasses conducted in field settings play a crucial role in the promotion of tangible cultural heritage. Members of the archaeological summer school become acquainted with archaeological monuments, which fosters a sense of national pride and patriotism, deepens their interest in history, and cultivates appreciation for cultural heritage. Each participant, by sharing their impressions with peers, also assumes the role of an informal communicator, thereby contributing to the expansion and outreach of the summer school network [16].

In recent years, one of the most exemplary models of an archaeological summer school has been the project titled *"Archaeological Excavations and Summer School at Keşikçidağ"*, implemented by the Keşikçidağ State Historical and Cultural Reserve. For the past five consecutive years, the reserve has achieved significant milestones in this area. The archaeological excavations are carried out by archaeologists from the Institute of Archaeology and Anthropology of the Azerbaijan National Academy of Sciences (ANAS), under the framework of a formal memorandum of cooperation signed between the Institute and the Keşikçidağ Reserve[17] .

The excavations take place in the Bronze Age kurgan burial mounds located on the Ceyrançöl plain, within the administrative boundaries of the Keşikçidağ State Historical and Cultural Reserve. Dozens of kurgans have been excavated across sites such as Sarıyoxuş, Karvan Valley, Qaltan Plain, Qarasoy, Sarısu, Candargöl, and Yovşanlıdərə, revealing numerous valuable examples of material culture [2; 5; 6; 7].

In accordance with the memorandum, the recovered artifacts are stored and exhibited at the administrative headquarters of the reserve. These artifacts are displayed year-round and are accessible to all participants. The most recent project realized by the reserve was the *"Scientific-Archaeological Excavations and Summer School at Keşikçidağ-5"*, conducted in the current year. This initiative reached an audience of more than 2,000 participants, including students and educators from regional universities, secondary and vocational institutions, museum staff, cultural heritage preservation and restoration specialists, volunteers, youth center members, and reserve employees, all of whom had the opportunity to observe the excavation process firsthand.

Young participants who joined the excavations followed the process with great enthusiasm and curiosity, acquiring a wealth of information about the discoveries. The progress and results of the excavation were covered by over 100 local and international media outlets and websites, receiving widespread positive feedback. The staff of the reserve have accumulated considerable experience in organizing and managing the summer school programs. Particularly noteworthy is the recurring participation of secondary school students and university undergraduates and postgraduates in the excavation sites. Their direct engagement fostered deep interest in archaeology and history and significantly encouraged respectful and attentive attitudes toward national heritage.

Figure 5. Archaeological summer school students during excavation.

The archaeological summer schools organized by the **Keşikçidağ State Historical-Cultural Reserve** can serve as a model in this field. The careful design of the school program, formation and organization of the student body, invitation of archaeologists, execution of excavations, dissemination and discussion of results, and ultimately, the scientific-practical seminars and open lessons—all reflect a unified program with a defined scientific orientation and demonstrate the integration of practical experience into education.

Conclusion

Archaeological summer schools play a vital role in fostering engagement with the discipline of archaeology among the younger generation—including school pupils, university students, and volunteers—as well as among the educators guiding them. These programs facilitate the development of interest in archaeology, enhance familiarity with archaeological monuments, offer opportunities to observe excavation processes firsthand, and enable participants to engage directly with material remains under the supervision of professional archaeologists.

Such experiences undoubtedly leave participants with a scientific understanding of how archaeological excavations are conducted. Observing and physically interacting with artifacts that have been buried for centuries or even millennia deepens one's knowledge of ancient history and reinforces theoretical learning through practical fieldwork. Direct engagement helps cultivate abstract thinking and allows participants to visualize the socio-political and religious aspects of prehistoric periods.

From this perspective, archaeological summer schools not only provide academic and practical education but also present history in a tangible and experiential manner. In the Republic of Azerbaijan, further improvement of archaeological summer school program designs and the development of these initiatives through the expertise of experienced institutions should be a priority. Expanding the audience for such projects, which shed light on the traces of our ancient history, is essential. Archaeological summer schools have significant value for the study and promotion of both local and national historical heritage.

Acknowledgement

The authors would like to express their sincere gratitude to the administrative teams of the Keshikchidagh State Historical-Cultural Reserve and the Avey State Historical-Cultural Reserve for their invaluable support and collaboration throughout the development and implementation of the archaeological summer schools. Special thanks are extended to the Institute of Archaeology and Anthropology of the Azerbaijan National Academy of Sciences for providing scientific guidance and resources essential to this project. The contributions of all participants, including students, volunteers, and local community members, are deeply appreciated for their active engagement in promoting cultural heritage and practical education.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article. The research and outcomes presented are independent and unbiased, with no financial or personal relationships that could have influenced the work.

References

1. Najafov, Sh. N. (2025). On the organization of trips to archaeological parks in Azerbaijan and the scientific evaluation of the use of archaeological materials. *Science, Education and Innovations in the Context of Modern Problems*, *8*(6), 233–240. https://imcra-az.org/uploads/public_files/2025-05/8625.pdf
2. Najafov, Sh. N., & Mursaquliyev, M. H. (2023). Traces of ancient culture in the Jeyranchol plain. *Science and Life*, *4*(482), 63–67. https://science.gov.az/uploads/pdf/4090_1703919335.pdf
3. Najafov, Sh. N., Mursaquliyev, M. H., Asadov, V. A., Fərmanov, F. S., & Mansurov, M. M. (2025, May 14–15). Archaeological research within the framework of the "Archaeological Summer School – 4" project in Keşikçidağ. In *Archaeological and Anthropological Research in Azerbaijan: Results and Perspectives. Abstracts of the Scientific Session Dedicated to the 80th Anniversary of ANAS* (pp. 51–54). Baku: AFPoligrAF.
4. Boudjemaa, A. (2025). The application of artificial intelligence in the humanities and social sciences: Archaeology and history as a case study. *Science, Education and Innovations in the Context of Modern Problems*, *8*(3), 243–255. https://doi.org/10.56352/sei/8.3.14
5. Najafov, Sh. N., & Mursaquliyev, M. H. (2024). Scientific-archaeological excavations and the Summer School – 4 project in Keşikçidağ. *Science and Life*, *4*(486), 42–45. https://science.gov.az/uploads/pdf/2223_1736939901.pdf
6. Mursaquliyev, M. G., Yusifzade, L. A., Mamedova, F. Y., & Najafov, Sh. N. (2024). Results of archaeological research conducted on the Jeyranchol plain in 2023. In *Topical Archaeology 7: Materials of the International Scientific Conference of Young Scholars* (pp. 152–155). St. Petersburg: Institute for the History of Material Culture, RAS. https://www.archeo.ru/izdaniya-1/vagnejshije-izdanija/pdf/2024AA7.pdf

7. Najafov, Sh. N., Mursaquliyev, M. G., & Aliyeva, S. B. (2025). Archaeological excavations on the Jeyranchol plain in 2024: Kurgans of the Karvan valley. In *New Materials and Methods in Archaeological Research: Territories and Borders in the Archaeological Dimension. Materials of the 8th Conference of Young Scholars* (pp. 52–54). Moscow: Russian Academy of Sciences Publishing House. https://drive.google.com/file/d/1l5t8wQjytclFmEdB70gQRxEZstGID2qY/view
8. Najafov, Sh. N., Mursaquliyev, M. G., & Aliyeva, S. B. (2024). Bronze Age kurgans of the Jeyranchol plain and their distribution zone. In *Akhinzhanov Readings – 2024: Proceedings of the International Scientific Conference of Students and Young Researchers* (pp. 123–129). Almaty: Hikari. https://archeo.kz/ru/library/aynzhanov-oulary/ahinzhanovskie-chteniya-2024/read/
9. Oubraham, D., & Amar, R. (2025). Prehistoric dwellings in Algeria through archaeological and artistic data. *Science, Education and Innovations in the Context of Modern Problems*, *8*(6), 148–155. https://doi.org/10.56334/sei/8.6.15
10. Najafov, S. N., & Hajiyeva, G. (2025). Study about the sacral traditions in the burial customs of the Middle Kura basin inhabitants in the Bronze Age. *Science, Education and Innovations in the Context of Modern Problems*, *8*(7). https://imcra-az.org/uploads/public_files/2025-06/87011.pdf
11. Ouernoughi, N. E.-H. (2025). British research on the ancient city of Timgad: The British traveler James Bruce as a model. *Science, Education and Innovations in the Context of Modern Problems*, *8*(7), 119–133. https://doi.org/10.56334/sei/8.7.14
12. Hiebert, F., & Alakbarov, V. A. (2007). Excavations near Qarajamirli village, Western Azerbaijan: Achaemenid monumental building and pottery. *Ancient Civilizations from Scythia to Siberia*, *13*(1–2), 31–45. https://www.researchgate.net/publication/ [link if available]
13. Alakbarov, V. A. (2018). Technological development of Neolithic pottery at Göytepe (West Azerbaijan). *Archaeology, Ethnology & Anthropology of Eurasia*, *46*(3), 22–31. https://eco-vector.com/ [link if available]
14. Zeynalov, A. A., et al. (2022). The Final Early Paleolithic of Azerbaijan based on Garaja site findings. *Archaeology, Ethnology & Anthropology of Eurasia*, *50*(4), 1–28. https://archaeology.nsc.ru/en/publications/jr-aeae-en/22-50-4/annot-01/
15. Amirkhanov, H. A. (2023). Rock art in the Stone Age of Gobustan: Patterns, techniques, and dating. *Rossijskaya arkheologiâ*. (In Russian). https://eco-vector.com/ [link if available]
16. Gasimov, P. (2020). Cultural identification of Early Bronze Age burial crypts in northwestern Azerbaijan. *Archaeology, Ethnology & Anthropology of Eurasia*, *48*(2). https://science.gov.az/en/news/open/13771
17. Najafov, S. N., Hajiyeva, G., & Abdurahmanov, Ə. İ. (2018). Archaeological explorations at Seyidlar II: Medieval settlement and burial ceramics. *Dövlət və Din*, *9*(38), 38–50
18. Rebaine, A., & Oubraham, D. (2025). Current economic challenges and their implications for archaeological heritage restoration policies and preservation strategies. *Science, Education and Innovations in the Context of Modern Problems*, *8*(7), 21–24. https://doi.org/10.56352/sei/8.7.3

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of the Research Article

Archaeological Summer Schools as Pedagogical Platforms: Practical Integration of Field Research, Heritage Education, and Cultural Identity Formation in Contemporary Azerbaijan

Musa Mursaquliyev
Director, Keshikchidagh State Historical-Cultural Reserve
Azerbaijan
Email: mursaqulov@gmail.com

Saadat Aliyeva
PhD in Pedagogy
Director, Avey State Historical-Cultural Reserve
Azerbaijan
E-mail: mursaqulova@gmail.com
ORCID: https://orcid.org/0000-0002-5370-3178

Shamil Najafov
PhD in History, Associate Professor
Institute of Archaeology and Anthropology, Azerbaijan National Academy of Sciences
Azerbaijan
Email: shamil_necefov@mail.ru
ORCID: https://orcid.org/0000-0001-8834-7188

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords archaeological education, cultural heritage, fieldwork, pedagogy, summer schools, Azerbaijan

Abstract

he integration of archaeological research into educational practice has emerged as a strategic priority in fostering awareness of cultural heritage among younger generations. Strengthening students' engagement with the ancient history of their homeland requires direct exposure to the historical geography of early human settlements and the systematic promotion of archaeological monuments—particularly at a time when unsubstantiated claims regarding heritage sites are increasingly prevalent.

Educational tours and field-based programs at archaeological sites, many of which represent recently discovered monuments offering novel insights to scholarship, provide significant pedagogical and scientific benefits. Conducted within open-air "archaeoparks," these initiatives function as immersive learning laboratories that connect theoretical instruction with practical experience. Nevertheless, gaps persist in history curricula and teaching materials, particularly in the coherent and outcome-oriented presentation of ancient and medieval periods. A comprehensive, systematized approach to lesson design and delivery is therefore critical for achieving deeper student competencies.

Archaeological summer schools have demonstrated considerable success in addressing these gaps. By embedding creativity-driven pedagogical methods, these schools enhance student innovation, reflective thinking, and active participation. Structured scientific-practical modules, including masterclasses, excavation-based training, and guided site visits, enable students to develop key cognitive skills such as analogical reasoning, pattern recognition, and critical analysis. Through this blend of educational and experiential learning,

archaeological summer schools not only enrich academic training but also strengthen cultural identity and the promotion of heritage preservation.

Citation. Mursaquliyev M., Aliyeva S., Najafov Sh. (2025). Archaeological Summer Schools as Pedagogical Platforms: Practical Integration of Field Research, Heritage Education, and Cultural Identity Formation in Contemporary Azerbaijan. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 627–635. https://doi.org/10.56352/sei/8.11.49

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.05.2025 | Accepted: 11.08.2025 | Published: 05.09.2025 (available online)

Introduction

In recent years, a new term has emerged in archaeological practice and theoretical science: *archaeological summer school*. The establishment of such schools, including the development of their curricula, selection of participants, formation of the audience, and definition of their scientific direction, must be conducted professionally and systematically. Archaeological summer schools serve as educational and cultural initiatives aimed at promoting the discipline of archaeology among secondary and university students, advancing the study of ancient history, publicizing our tangible cultural heritage, and contributing to the identification and recognition of archaeological monuments.

In Azerbaijan, especially in recent years, archaeological summer schools have seen a growing audience, supported by the formation of professional teaching and training teams in this field. The primary objective is, naturally, to study the earliest traces of our historical memory and to disseminate this knowledge more widely among the younger generation. However, a key aspect is not only the study of ancient heritage but also the inclusion of archaeological, historical, and architectural monuments from various historical periods as subjects of academic inquiry and instruction.

The organization and direction of archaeological summer schools may involve one or several institutions and research centers. For this purpose, the coordinating institution must establish effective scientific oversight and ensure the orderly execution of fieldwork. This is particularly crucial because a substantial part of archaeological summer school activities consists of outdoor research, including archaeological excavations (see Figure 1).

An *archaeological summer school* is a structured program that focuses on the instruction of archaeology in outdoor field conditions, combining practical training with the theoretical knowledge acquired through formal education. It aims to bridge classroom learning and field application by revisiting and reinforcing theoretical concepts through the material-cultural remains uncovered during archaeological excavations.

The foundation of an archaeological summer school lies in the synthesis of information obtained from the study of archaeology as a scientific discipline—particularly ancient and medieval history in secondary school curricula and archaeology courses in university-level programs—with hands-on experience in open-air excavation environments. In secondary school history textbooks, archaeological excavations are generally covered within narrow limits. Only a small portion of the findings from excavations conducted in the country or globally is conveyed to students. Some recent archaeological excavations, particularly those involving newly discovered monuments, caves, open-air campsites, settlement sites (both urban and rural), necropolises, fortresses, cyclopean structures, places of worship, and shelters—although not presented in full depth—are partially introduced to students. Naturally, providing complete and detailed information on all such discoveries would considerably increase the academic load and risk overwhelming students with excessive archaeological detail.

Figure 1. Students of the Archaeological Summer School at the Qarasoy Kurgans (2023, Keşikçidağ State Historical and Cultural Reserve, Aghstafa District)

What is an Archaeological Summer School?

At the university level, archaeology is taught for a limited duration within history departments, while students from non-history faculties receive only a brief introduction to historical subjects, with minimal reference to archaeological methods or findings. Nonetheless, students are exposed to a degree of information on archaeological excavations and material-cultural heritage (see Figure 2).

Archaeological summer schools serve as platforms where theoretical knowledge acquired in both secondary and higher education is revisited and integrated within the context of actual field excavations. Their objective is to reinforce classroom-based learning with practical experience, deliver knowledge directly at the excavation site, and demonstrate that pre-written history can only be understood through archaeological sources [1].

Structure and Pedagogy of the Archaeological Summer School

An archaeological summer school must be based on a pre-established academic workload and curriculum. The participants should form a motivated and disciplined audience, capable of adapting to outdoor training conditions. This audience is not limited to students, university faculty, or schoolteachers. It may also include volunteers; young professionals working in scientific, medical, industrial, and public service sectors; staff from institutions and enterprises; employees of history and ethnography museums, historical-cultural and nature reserves; personnel from youth centers; educators; and representatives from heritage protection and restoration services, among others.

The archaeological summer school is structured around theoretical instruction, practical workshops, hands-on training, and masterclasses—all centered on the excavation process itself.

Figure 2. Students and instructors during an open-air archaeological lesson

Archaeological Summer School and Education: Practical Integration

The collaborative efforts of summer school participants—spanning the domains of school-community, school-family, school-archaeologist, and school-educator cooperation—create favorable conditions for effective educational reform and practical integration. These collaborative relationships are among the core criteria for ensuring the quality of education within the archaeological summer school framework.

When assessing the effectiveness of the summer school's operations, one of the key indicators is the level of awareness and engagement achieved among the participants. Transforming them into active stakeholders in the learning process is central to the leadership and management policies of the school. These considerations are not limited to theoretical or scientific perspectives but are rooted in practical evaluation and real-world implementation [1].

Two core indicators define teaching efficiency in archaeological summer schools: **time** and **value**. If higher-quality learning outcomes can be achieved using fewer resources and less time compared to traditional methods, the process is considered efficient. Productivity, in this context, is measured by the ratio of learning outcomes to the pedagogical effort invested. In other words, if greater instructional effectiveness and learning quality are attained with minimal effort, the result is deemed productive.

Therefore, when evaluating innovation within archaeological summer schools, **efficient learning** and **high-quality practical training** are considered primary indicators. This implies that the innovations implemented not only enhance the productivity of learning but also increase the overall efficiency of the educational process (see Figure 3).

Archaeological summer schools also represent the emergence of new educational content and forms—ranging from teaching materials, academic curricula, and textbooks to knowledge systems and innovative educational products or services.

Figure 3. Field-based archaeological masterclasses

Visualization and Creative Transformation of Knowledge

A core principle of modern education lies in reinforcing theoretical knowledge acquired in both secondary and higher education with tangible demonstrations, transforming this knowledge into creative competencies. Instructional programs in educational institutions that foster creativity stimulate innovative processes during archaeological summer schools. Practical coordination, direct observation, and visits to archaeoparks or active excavation sites enable students to draw analogies, transfer ideas creatively and laterally from one context to another, integrate knowledge across disciplines, generate unconventional ideas, anticipate overarching frameworks, and analyze diverse cognitive approaches [1, pp. 234–235].

Observing archaeological excavations and visiting archaeoparks within the summer school context provides a multidimensional archaeological experience. It allows students to engage with the content actively, supports the evaluation of creative activities, and motivates participants to articulate their perspectives on the process. As part of the curriculum, students, volunteers, and participants gain firsthand exposure to ancient tools—made of stone, bone, or metal—as well as diverse ceramic artifacts, ornaments and beads fashioned from precious and semi-precious stones (such as agate, jasper, opal, aragonite, basalt, etc.) and various metals (iron, gold, bronze, etc.). They also observe examples of weaponry (arrowheads, spear tips, battle axes, swords, defensive arms, etc.). This live interaction not only piques interest but also stimulates logical reasoning and critical thinking skills [11, 56 p.].

The Role of Archaeological Summer Schools in Promoting Cultural Heritage

Archaeological summer schools play a significant role in the promotion and dissemination of tangible cultural heritage. Overall, they fulfill three core functions: integrating education and science, facilitating practical field experience in education, and promoting awareness and recognition of material-cultural heritage. While the first two have been addressed earlier, the third is of particular importance, as it focuses on raising public awareness of archaeological and historical monuments.

The primary focus of archaeological summer school audiences is the excavation site itself. When participants arrive at the excavation area, the archaeologist plays a crucial introductory role by welcoming them and providing

background on the site, including its historical, archaeological, and sometimes architectural significance, and explaining why this specific location was selected for excavation [13, pp. 51–52]. This constitutes the initial phase.

Subsequently, participants are introduced to the excavation area. At this stage, it is important to note that the field archaeologist assumes multiple roles: as a guide, an informant, a practical instructor, and a lecturer in an open-air classroom setting [4]. They must engage the audience effectively, spark interest in the excavation work, and inspire curiosity. The archaeologist should respond to participant questions with enthusiasm, provide accurate information, and convey comprehensive insights into the archaeological-historical context of the site.

Moreover, the archaeologist should explain the typologies of monuments, the chronological classification of habitation and burial sites, the categorization and comparative analysis of discovered material-cultural remains, and relevant analogies (see Figure 5). The archaeologist must also guide participants in conducting supervised excavations, facilitate initial field documentation of the findings, and oversee this process with professional diligence [14, pp. 42–43].

Figure 4. Familiarization with an archaeological monument

Naturally, masterclasses conducted in field settings play a crucial role in the promotion of tangible cultural heritage. Members of the archaeological summer school become acquainted with archaeological monuments, which fosters a sense of national pride and patriotism, deepens their interest in history, and cultivates appreciation for cultural heritage. Each participant, by sharing their impressions with peers, also assumes the role of an informal communicator, thereby contributing to the expansion and outreach of the summer school network [16].

In recent years, one of the most exemplary models of an archaeological summer school has been the project titled *"Archaeological Excavations and Summer School at Keşikçidağ"*, implemented by the Keşikçidağ State Historical and Cultural Reserve. For the past five consecutive years, the reserve has achieved significant milestones in this area. The archaeological excavations are carried out by archaeologists from the Institute of Archaeology and Anthropology of the Azerbaijan National Academy of Sciences (ANAS), under the framework of a formal memorandum of cooperation signed between the Institute and the Keşikçidağ Reserve[17] .

The excavations take place in the Bronze Age kurgan burial mounds located on the Ceyrançöl plain, within the administrative boundaries of the Keşikçidağ State Historical and Cultural Reserve. Dozens of kurgans have been excavated across sites such as Sarıyoxuş, Karvan Valley, Qaltan Plain, Qarasoy, Sarısu, Candargöl, and Yovşanlıdərə, revealing numerous valuable examples of material culture [2; 5; 6; 7].

In accordance with the memorandum, the recovered artifacts are stored and exhibited at the administrative headquarters of the reserve. These artifacts are displayed year-round and are accessible to all participants. The most recent project realized by the reserve was the *"Scientific-Archaeological Excavations and Summer School at Keşikçidağ-5"*, conducted in the current year. This initiative reached an audience of more than 2,000 participants, including students and educators from regional universities, secondary and vocational institutions, museum staff, cultural heritage preservation and restoration specialists, volunteers, youth center members, and reserve employees, all of whom had the opportunity to observe the excavation process firsthand.

Young participants who joined the excavations followed the process with great enthusiasm and curiosity, acquiring a wealth of information about the discoveries. The progress and results of the excavation were covered by over 100 local and international media outlets and websites, receiving widespread positive feedback. The staff of the reserve have accumulated considerable experience in organizing and managing the summer school programs. Particularly noteworthy is the recurring participation of secondary school students and university undergraduates and postgraduates in the excavation sites. Their direct engagement fostered deep interest in archaeology and history and significantly encouraged respectful and attentive attitudes toward national heritage.

Figure 5. Archaeological summer school students during excavation.

The archaeological summer schools organized by the **Keşikçidağ State Historical-Cultural Reserve** can serve as a model in this field. The careful design of the school program, formation and organization of the student body, invitation of archaeologists, execution of excavations, dissemination and discussion of results, and ultimately, the scientific-practical seminars and open lessons—all reflect a unified program with a defined scientific orientation and demonstrate the integration of practical experience into education.

Conclusion

Archaeological summer schools play a vital role in fostering engagement with the discipline of archaeology among the younger generation—including school pupils, university students, and volunteers—as well as among the educators guiding them. These programs facilitate the development of interest in archaeology, enhance familiarity with archaeological monuments, offer opportunities to observe excavation processes firsthand, and enable participants to engage directly with material remains under the supervision of professional archaeologists.

Such experiences undoubtedly leave participants with a scientific understanding of how archaeological excavations are conducted. Observing and physically interacting with artifacts that have been buried for centuries or even millennia deepens one's knowledge of ancient history and reinforces theoretical learning through practical fieldwork. Direct engagement helps cultivate abstract thinking and allows participants to visualize the socio-political and religious aspects of prehistoric periods.

From this perspective, archaeological summer schools not only provide academic and practical education but also present history in a tangible and experiential manner. In the Republic of Azerbaijan, further improvement of archaeological summer school program designs and the development of these initiatives through the expertise of experienced institutions should be a priority. Expanding the audience for such projects, which shed light on the traces of our ancient history, is essential. Archaeological summer schools have significant value for the study and promotion of both local and national historical heritage.

Acknowledgement

The authors would like to express their sincere gratitude to the administrative teams of the Keshikchidagh State Historical-Cultural Reserve and the Avey State Historical-Cultural Reserve for their invaluable support and collaboration throughout the development and implementation of the archaeological summer schools. Special thanks are extended to the Institute of Archaeology and Anthropology of the Azerbaijan National Academy of Sciences for providing scientific guidance and resources essential to this project. The contributions of all participants, including students, volunteers, and local community members, are deeply appreciated for their active engagement in promoting cultural heritage and practical education.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article. The research and outcomes presented are independent and unbiased, with no financial or personal relationships that could have influenced the work.

References

1. Najafov, Sh. N. (2025). On the organization of trips to archaeological parks in Azerbaijan and the scientific evaluation of the use of archaeological materials. *Science, Education and Innovations in the Context of Modern Problems*, *8*(6), 233–240. https://imcra-az.org/uploads/public_files/2025-05/8625.pdf
2. Najafov, Sh. N., & Mursaquliyev, M. H. (2023). Traces of ancient culture in the Jeyranchol plain. *Science and Life*, *4*(482), 63–67. https://science.gov.az/uploads/pdf/4090_1703919335.pdf
3. Najafov, Sh. N., Mursaquliyev, M. H., Asadov, V. A., Fərmanov, F. S., & Mansurov, M. M. (2025, May 14–15). Archaeological research within the framework of the "Archaeological Summer School – 4" project in Keşikçidağ. In *Archaeological and Anthropological Research in Azerbaijan: Results and Perspectives. Abstracts of the Scientific Session Dedicated to the 80th Anniversary of ANAS* (pp. 51–54). Baku: AFPoligrAF.
4. Boudjemaa, A. (2025). The application of artificial intelligence in the humanities and social sciences: Archaeology and history as a case study. *Science, Education and Innovations in the Context of Modern Problems*, *8*(3), 243–255. https://doi.org/10.56352/sei/8.3.14
5. Najafov, Sh. N., & Mursaquliyev, M. H. (2024). Scientific-archaeological excavations and the Summer School – 4 project in Keşikçidağ. *Science and Life*, *4*(486), 42–45. https://science.gov.az/uploads/pdf/2223_1736939901.pdf
6. Mursaquliyev, M. G., Yusifzade, L. A., Mamedova, F. Y., & Najafov, Sh. N. (2024). Results of archaeological research conducted on the Jeyranchol plain in 2023. In *Topical Archaeology 7: Materials of the International Scientific Conference of Young Scholars* (pp. 152–155). St. Petersburg: Institute for the History of Material Culture, RAS. https://www.archeo.ru/izdaniya-1/vagnejshije-izdanija/pdf/2024AA7.pdf

7. Najafov, Sh. N., Mursaquliyev, M. G., & Aliyeva, S. B. (2025). Archaeological excavations on the Jeyranchol plain in 2024: Kurgans of the Karvan valley. In *New Materials and Methods in Archaeological Research: Territories and Borders in the Archaeological Dimension. Materials of the 8th Conference of Young Scholars* (pp. 52–54). Moscow: Russian Academy of Sciences Publishing House. https://drive.google.com/file/d/1l5t8wQjytclFmEdB70gQRxEZstGID2qY/view
8. Najafov, Sh. N., Mursaquliyev, M. G., & Aliyeva, S. B. (2024). Bronze Age kurgans of the Jeyranchol plain and their distribution zone. In *Akhinzhanov Readings – 2024: Proceedings of the International Scientific Conference of Students and Young Researchers* (pp. 123–129). Almaty: Hikari. https://archeo.kz/ru/library/aynzhanov-oulary/ahinzhanovskie-chteniya-2024/read/
9. Oubraham, D., & Amar, R. (2025). Prehistoric dwellings in Algeria through archaeological and artistic data. *Science, Education and Innovations in the Context of Modern Problems*, *8*(6), 148–155. https://doi.org/10.56334/sei/8.6.15
10. Najafov, S. N., & Hajiyeva, G. (2025). Study about the sacral traditions in the burial customs of the Middle Kura basin inhabitants in the Bronze Age. *Science, Education and Innovations in the Context of Modern Problems*, *8*(7). https://imcra-az.org/uploads/public_files/2025-06/87011.pdf
11. Ouernoughi, N. E.-H. (2025). British research on the ancient city of Timgad: The British traveler James Bruce as a model. *Science, Education and Innovations in the Context of Modern Problems*, *8*(7), 119–133. https://doi.org/10.56334/sei/8.7.14
12. Hiebert, F., & Alakbarov, V. A. (2007). Excavations near Qarajamirli village, Western Azerbaijan: Achaemenid monumental building and pottery. *Ancient Civilizations from Scythia to Siberia*, *13*(1–2), 31–45. https://www.researchgate.net/publication/ [link if available]
13. Alakbarov, V. A. (2018). Technological development of Neolithic pottery at Göytepe (West Azerbaijan). *Archaeology, Ethnology & Anthropology of Eurasia*, *46*(3), 22–31. https://eco-vector.com/ [link if available]
14. Zeynalov, A. A., et al. (2022). The Final Early Paleolithic of Azerbaijan based on Garaja site findings. *Archaeology, Ethnology & Anthropology of Eurasia*, *50*(4), 1–28. https://archaeology.nsc.ru/en/publications/jr-aeae-en/22-50-4/annot-01/
15. Amirkhanov, H. A. (2023). Rock art in the Stone Age of Gobustan: Patterns, techniques, and dating. *Rossijskaya arkheologiâ*. (In Russian). https://eco-vector.com/ [link if available]
16. Gasimov, P. (2020). Cultural identification of Early Bronze Age burial crypts in northwestern Azerbaijan. *Archaeology, Ethnology & Anthropology of Eurasia*, *48*(2). https://science.gov.az/en/news/open/13771
17. Najafov, S. N., Hajiyeva, G., & Abdurahmanov, Ə. İ. (2018). Archaeological explorations at Seyidlar II: Medieval settlement and burial ceramics. *Dövlət və Din*, *9*(38), 38–50
18. Rebaine, A., & Oubraham, D. (2025). Current economic challenges and their implications for archaeological heritage restoration policies and preservation strategies. *Science, Education and Innovations in the Context of Modern Problems*, *8*(7), 21–24. https://doi.org/10.56352/sei/8.7.3

Science, Education and Innovations in the Context of Modern Problems

Issue 11, Vol. 8, 2025

Title of the Research Article

Comparative Mechanisms for Assessing the Quality of Higher Education Institutions as a Tool for Enhancing Quality in Higher Education

Matanat Gurbanova

Senior Research Fellow

Azerbaijan Institute of Education, Department of the Theory and History of Education

Azerbaijan

Email: m.qurbanova@arti.edu.az | ORCID: https://orcid.org/0000-0001-7245-6275

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords higher education quality; university ranking; academic competitiveness; global education systems; quality assurance; bibliometric indicators

Abstract

The ranking and evaluation of higher education institutions have become a central mechanism for assessing academic quality and competitiveness in the global knowledge economy. Since 2003, various international organizations and research institutions have introduced methodologies to systematically rank universities based on multidimensional criteria, including web visibility, academic mobility, research output, citation frequency, faculty quality, graduate employability, labor market reputation, research leadership, and contributions to scientific impact as measured by bibliometric indicators such as the H-index. Prominent systems include the Academic Ranking of World Universities (ARWU), Webometrics Ranking of World Universities, QS–Times Higher Education Rankings, and the Performance Ranking of Scientific Papers for World Universities. While these rankings offer comparative benchmarks for global higher education, they also highlight disparities, as some national universities remain underrepresented. In response, several countries have developed national ranking frameworks to reflect local priorities and ensure representation in the international higher education landscape. This paper explores comparative ranking mechanisms as strategic tools for enhancing quality assurance in higher education and discusses their implications for policy, institutional reform, and sustainable development of academic excellence.

Citation. Gurbanova M. (2025). Comparative Mechanisms for Assessing the Quality of Higher Education Institutions as a Tool for Enhancing Quality in Higher Education. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 636–648. https://doi.org/10.56352/sei/8.11.50

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 03.05.2025 | Accepted: 12.08.2025 | Published: 06.09.2025 (available online)

Introduction

The issue of quality assurance in higher education has gained increasing importance in recent decades. University ranking systems, first introduced in 2003, serve as a comparative mechanism for assessing institutional performance

worldwide. These systems apply diverse criteria such as digital presence, academic publications, teaching quality, research excellence, and graduate employability.

Internationally recognized rankings such as ARWU (Shanghai Jiao Tong University, 2003), Webometrics (Cybermetrics Lab, Spain, 2004), QS–THE (United Kingdom, 2004), and the Performance Ranking of Scientific Papers (Taiwan, 2007) have established benchmarks for evaluating universities globally. However, the absence of representation for certain countries has prompted the creation of national ranking frameworks to ensure that local higher education institutions are evaluated according to both international and national standards.

This paper examines these comparative mechanisms in depth, analyzing their strengths, limitations, and implications for quality enhancement in higher education.

Background

In the early years of international ranking initiatives, many universities across different countries (e.g., Argentina, Australia, Brazil, Canada, Chile, Pakistan, and Ukraine) were excluded from global evaluations. This exclusion was largely due to several limitations: the absence of English-language versions of institutional websites, the failure to publish research outputs online, and the lack of articles published in international academic databases on behalf of these institutions. Consequently, national ranking mechanisms began to emerge to address these gaps. In post-Soviet states, Russia initiated national university ranking exercises in 2004 under the supervision of the Ministry of Education (implemented by the Patani Charity Society). Kazakhstan followed in 2006, launching its own ranking system to measure the performance of higher education institutions.

In Azerbaijan, the establishment of a national ranking system was initiated under the order of the Minister of Education of the Republic of Azerbaijan (Order No. 842, dated 11 October 2013). This initiative emerged as part of the "Competition for Supporting Public Initiatives," particularly through the projects Educational Policy Initiatives and Research Initiatives in Education. The strategic foundation for this undertaking was reinforced by the State Strategy for the Development of Education in the Republic of Azerbaijan, approved by Presidential Decree on 24 October 2013. The project executor was the Organization of Specialists Educated Abroad (AKTAM). Within the framework of the project Defining the Ranking of Higher Education Institutions in the Republic of Azerbaijan, a set of proposals was developed to create a national ranking mechanism aimed at ensuring the representation of Azerbaijani universities in international evaluation systems. Given the dynamic nature of global science and the rapidly evolving labor market, the development of a flexible and robust national ranking model for Azerbaijan is now considered an urgent necessity.

Research Aim

The purpose of this study is threefold:

- To analyze the establishment and historical evolution of international, national, and subject-specific ranking systems, highlighting their necessity and strategic directions.
- To identify parameters for ranking secondary specialized education institutions, including semester and final examinations, state exams, academic qualifications of teaching staff, research productivity, creative achievements, and admission performance of graduates into higher education institutions.
- To propose recommendations for improving faculty quality, citation frequency of academic works, graduate employability, institutional reputation in the labor market, admission rates of international students, leadership in scientific research, and the significance of research output.

Research Object

The object of this study is the system of international, national, and subject-specific ranking mechanisms of higher education institutions.

Research Subject

The subject of this study is the identification of principal parameters and indicators that ensure the alignment of higher education institutions with international, national, and subject-specific ranking systems.

Scientific Novelty

This research provides a theoretical generalization and justification of ranking mechanisms as instruments for enhancing the quality of higher education. The novelty lies in comparing higher and secondary specialized education institutions through ranking models, while also determining the level at which international experience can be applied to Azerbaijan's higher education system.

The study underscores the necessity of establishing a scientifically grounded methodology that considers the current state of higher education in Azerbaijan. It also examines how international best practices in quality assessment and ranking can be adapted to national needs. This analysis represents an important contribution to both pedagogical theory and the practice of higher education quality management.

International, National, and Subject-Specific Ranking Systems

The development of a higher education system is a key indicator of a nation's overall socio-economic status, quality of life, and level of social development. To measure such progress and ensure accountability, both international and national standards are necessary.

However, no ranking system can be considered entirely objective, nor do the existing systems align perfectly with one another. This is because quality indicators and achievements of universities cannot be fully captured by numerical values alone. To address this challenge, UNESCO's Higher Education Centre, in collaboration with an international expert group, developed the Berlin Principles—a framework of 16 guidelines designed to ensure transparency and comparability in ranking systems.

Although universities differ significantly in terms of faculty profiles, student populations, and disciplinary orientations (e.g., medicine, engineering, mathematics, architecture), the evaluation of research publications has been universally recognized as a key principle.

The measurability of quality and performance is enabled through reliable datasets and numerical indicators. Accordingly, each university can align its mission and vision with both international and national ranking standards to integrate more effectively into global education systems. Among the most widely recognized systems in international practice are the QS World University Rankings, Times Higher Education (THE), and the Academic Ranking of World Universities (ARWU–Shanghai Ranking).

3. Leading International University Ranking Systems

3.1. QS World University Rankings

Since 2004, the QS World University Rankings, developed by the company Quacquarelli Symonds, has assessed universities globally using a combination of academic and employer-based criteria. Institutions are evaluated across four main categories, with each factor contributing a maximum of 100 points. In addition to overall ranking, QS also evaluates performance by subject areas and faculties.

Table 3.1.1. Calculation Criteria for QS World University Rankings

Factor	Indicator	Description	Weighting (%)
Research Quality	Academic reputation	Score based on peer review	40
	Faculty research	Citation rate of	20

	citations	academic staff publications	
Graduate Employability	Employer reputation	Employer survey results	10
Internationalization	International faculty	Number of foreign academic staff	5
	International students	Number of enrolled foreign students	5
Teaching Quality	Faculty-to-student ratio	Ratio of faculty to students	20

3.2. Academic Ranking of World Universities (ARWU – Shanghai Ranking)

The Academic Ranking of World Universities (ARWU), initiated in 2003 by the Shanghai Jiao Tong University Ranking Committee, annually publishes a list of the world's top 500 universities. Initially, ARWU aimed to compare Chinese universities with leading global institutions. Over time, ARWU has become one of the most respected systems due to its robust, transparent, and evidence-based evaluation methodology.

Table 3.2.1. Calculation Criteria for ARWU – Shanghai Ranking

Factor	Indicator	Code	Weighting (%)
Education Quality	Alumni and faculty winning Nobel Prizes	Alumni	10
Faculty Excellence	Staff receiving field medals	Award	20
	Highly cited researchers in 21 fields	HiCi	20
Research Output	Publications in Nature and Science	N&S	20
	Publications indexed in SCI-Expanded and SSCI	SCI	20
Institutional Size	Performance relative to university size	Size	10
Total			100

3.3. Other Influential International Ranking Systems

Several additional reputable systems also contribute to the global evaluation of universities:

1. Newsweek Global Universities Ranking – Top 100 global universities.
2. Webometrics Ranking of World Universities – Developed by the Cybermetrics Laboratory, Spain.
3. Google Search G-Factor Ranking – Based on Google indexing and references.
4. MINES Professional Ranking – Evaluates universities specializing in engineering and technology.
5. HEETACT – Performance Ranking of Scientific Papers for World Universities, developed by Taiwan's Higher Education Evaluation and Accreditation Council.
6. Leiden Ranking – Conducted by the Centre for Science and Technology Studies (CWTS), Leiden University, Netherlands.
7. SCImago Institutions Ranking – Uses Scopus data to compare over 17,000 journals and institutions.
8. Global University Ranking – Compiled by Wuhan University, China.

4. The Case of Azerbaijan: Towards a National Ranking System

In Azerbaijan, the creation of a national ranking system for higher education institutions has become essential. Several indicators are particularly emphasized to align national universities with international standards:

4.1. Academic and Teaching Staff Indicators

- Ratio of professors to students.
- Ratio of doctors of science to students.
- Ratio of associate professors to students.
- Ratio of PhD holders to students.
- Ratio of staff without academic degrees to students.
- Ratio of foreign faculty to students.
- Ratio of master's students to total students.
- Ratio of foreign master's students to total students.
- Ratio of doctoral candidates to students.
- Ratio of foreign doctoral candidates to students.
- Ratio of foreign undergraduate students to total students.

4.2. Research and Scientific Activity Indicators

- Number of scientific publications per academic staff member.
- Number of international publications per academic staff member.
- Number of publications in impact factor journals per academic staff member.
- Number of monographs per academic staff member.
- Number of textbooks and teaching manuals per academic staff member.
- Number of patents registered in Azerbaijan per academic staff member.
- Number of patents registered abroad per academic staff member.
- H-index of faculty across disciplines.

4.3. University Web Presence Indicators

- Number of external citations/links to the university website.
- Number of valuable files available on the website.
- Number of internal pages and directories on the university website.
- Quality and functionality of the university website.

5. The Berlin Principles on Ranking Higher Education Institutions

In 2004, the European Centre for Higher Education (UNESCO-CEPES) and the Institute for Higher Education Policy (United States) convened an international expert group on ranking. This group formulated the Berlin Principles on Ranking of Higher Education Institutions (Berlin, May 2006), which presented general principles and standardized methodologies for university rankings (Hazelkorn, 2015; UNESCO, 2006).

According to these principles, university rankings should be established across three independent categories:
1. Academic resources and institutional capacity – including faculty qualifications, student achievements, teaching quality, financial resources, and infrastructure.
2. Internal evaluation – assessments by teachers and students within the institution.
3. External evaluation – employer assessments of graduates, including input from national and local authorities, as well as large and small enterprises.

Within each category, numerous criteria are applied. For example, the academic resources category includes seven criteria and thirty-nine indicators, with data collected directly from universities. Students answer structured questionnaires in seven groups, while faculty and students participate in surveys. To assess graduate employability, both public and private organizations provide information on recent hires, thereby identifying universities whose graduates are most successful in the labor market.

Thus, the overall ranking of a higher education institution is determined by aggregating materials collected across these three categories. Predetermined evaluation scores cover resources, faculty quality, student performance, the proportion of international students, research capacity, financial management, admissions, teaching results, international collaboration, and socio-cultural activities.

6. Principles for Developing a National Ranking in Azerbaijan

The application of ranking systems in Azerbaijan must consider both international guidelines and local specificities. The following guiding principles are emphasized:

- Recognition of the diversity of institutions and their missions (state vs. private universities).
- Consideration of Azerbaijan's linguistic, cultural, economic, and historical contexts, alongside careful adaptation of international practices.
- Reliance on verified and independent sources of data.
- Implementation of organizational rules that enhance the credibility of rankings.
- Ensuring transparency of factors and methodologies used in rankings so that end-users clearly understand them.

The objectives of establishing a national ranking are as follows:

1. To provide reliable information for decision-making to stakeholders (prospective students, parents, policymakers, employers, and international organizations).
2. To stimulate competition and development among universities.
3. To encourage the creation and strengthening of internal quality assurance centers.
4. To identify levels of academic autonomy and integrity within universities.
5. To promote self-governance and accountability in higher education institutions.

7. Academic Staff Evaluation Criteria

Globally, evaluation of academic staff quality is based on relatively common parameters, such as Nobel or Fields awards, citation frequency, and overall reputation. For example, at the University of North Carolina (USA), academic staff are evaluated across three dimensions (Shin & Toutkoushian, 2011):

1. Teaching and curricular development
   - Academic qualifications by discipline.
   - Course design and delivery.
   - Supervision of student research.
   - Mentorship of teaching assistants.
   - Development of new curricula.

2. Research, creativity, and professional contributions
   - Peer-reviewed publications.
   - Conference presentations.
   - Creative works and innovations.

3. Service to university, community, and profession
   - Contributions to university governance.
   - Public engagement and media presence.
   - Professional service activities.

Portfolios are prepared for each staff member, and the results of evaluation determine reappointment, promotions, or tenure.

8. Graduate Employability and Socio-Economic Impact

Graduate employability and reputation in the labor market remain key ranking factors. Employer surveys and evaluations typically consider:

- Professional qualifications and skills.
- Readiness for full-time work.
- Ability to transition between different activities.
- Capacity for teamwork and leadership.
- Creativity and problem-solving abilities.
- Strength of fundamental and theoretical training.

Graduates are also assessed for their post-education benefits, classified into four categories: public economic, public social, private economic, and private social benefits (OECD, 2019).

Table 8.1. Socio-Economic Benefits of Higher Education Graduates

Public Economic Benefits	Public Social Benefits	Private Economic Benefits	Private Social Benefits
Increased tax revenues	Reduced crime rates	Higher living standards	Better health and longevity
Increased productivity	Growth in donations and social services	Easier entry into labor markets	Better welfare for children
Increased consumption	Enhanced civic responsibility	Greater investment capacity	More rational consumer decisions
Improved labor adaptability	Social cohesion and equality	Improved working conditions	Higher individual social status
Reduced state dependency	Improved technological adaptability	Career mobility	Increased leisure and cultural activities

9. International Comparison: Graduate Employment Rates

According to Eurostat data, employment rates of graduates aged 20–34 who completed higher education within the last three years vary significantly across Europe (Eurostat, 2022). The highest rate was recorded in Malta (96.7%), followed by Iceland (95.8%) and the Netherlands (94.8%). Other examples include:

- Germany – 94.3%
- United Kingdom – 88.4%
- Finland – 88.3%
- France – 84.4%
- Spain – 77.9%
- Turkey – 64.2%
- Italy – 62.8%
- Greece – 59.0%

These figures demonstrate significant variation across countries, underscoring the importance of aligning national ranking systems with labor market outcomes.

10. Research Leadership and Evaluation of Scientific Output

10.1. The Concept of the Research University

The notion of the research university originated in 1818 with the model of Humboldt University in Germany. Over two centuries, this tradition has created the foundations for integrating teaching and research while maintaining institutional diversity in missions and visions (Altbach, 2011; Clark, 1995). The status of a research university requires clear commitments to advanced inquiry and innovative research productivity.

All major international ranking systems allocate significant—sometimes predominant—weight to research performance and scientific publications. For universities in the Republic of Azerbaijan to achieve higher representation in these rankings, the primary condition is the recruitment and retention of professional, productive researchers, alongside the provision of favorable working conditions and structured career development opportunities.

When productive researchers are engaged, any higher education institution can legitimately claim the status of a "research university" or "research-based institution," provided it meets the following requirements:

- Recruitment of highly skilled academic staff with strong research capabilities.
- Allocation of additional time for faculty to conduct research.
- Provision of financial resources to support research activities.
- Establishment of appropriate research infrastructure.
- Involvement of doctoral candidates and research assistants in institutional projects.
- Prioritization of scholarly publications in faculty evaluation and promotion processes.

10.2. Metrics for Assessing Research Output

The evaluation of research performance and scientific publications relies on several metrics of varying significance:

1. Total number of publications – Useful as a measure of productivity but limited in reflecting the impact or quality of research.
2. Total number of citations – Indicates the utility of research by demonstrating how often it is used as a reliable reference in subsequent studies.
3. Citations per publication – Balances productivity and impact by enabling comparison between experienced scholars with many publications and early-career researchers with fewer outputs. However, since citations often require several years to accumulate, this measure can sometimes disadvantage highly productive scholars.
4. High-impact publications – Emphasis on outputs that exceed a specific citation threshold (e.g., five or more citations), highlighting contributions that are widely recognized and influential.
5. H-index – Introduced in 2005 by Argentine-American physicist Jorge Hirsch (Hirsch, 2005), the h-index measures both productivity and citation impact. It reflects the number of publications (h) that have received at least h citations each.

Mathematically:

$$h\text{-}index = n_a$$

where n_a represents the number of papers (h) that have been cited at least h times.

For example, ten citations to one article are equivalent to one citation each for ten articles—both cases yield an h-index of 1.

10.3. Strengths and Limitations of the H-index

The h-index, sometimes referred to as the Hirsch index, is widely used to evaluate scientific productivity and professional reputation. While it provides a more balanced measure compared to total publications or citations alone, it still presents limitations by reducing scholarly achievement to a single numerical value.

Nevertheless, the h-index is considered more reliable than raw counts of publications or citations, as it excludes:
- Authors with only one or two highly cited publications without sustained research activity.
- Researchers with multiple low-impact publications that receive minimal citations.

Thus, the h-index encourages not only higher publication output but also greater emphasis on producing impactful and frequently cited work (Bornmann & Daniel, 2007; Egghe, 2006).

11. The H-index and Its Application in Ranking Systems

11.1. Formal Definition of the H-index

Figure 1.3.1 illustrates the dependency graph of the h-index value. Formally, if we let f(i) represent the citation count of the i-th publication, the h-index can be computed as follows:

- Arrange the citation counts in descending order.

- Identify the last position in the sequence where the number of citations f(i) is greater than or equal to its rank i. This position corresponds to the h-index.

For example:

- An author with five publications (A, B, C, D, E) receiving 10, 8, 5, 4, and 3 citations respectively has an h-index of 4, because the fourth publication received 4 citations, while the fifth received only 3.
- Another author with five publications receiving 25, 8, 5, 3, and 3 citations has an h-index of 3, because the fourth publication received only 3 citations.

Mathematically:

$$h\text{-}index(f) = max_i \, min(f(i), i)$$

where f(i) is the number of citations for publication i.

It should be noted that the h-index is automatically calculated and displayed in platforms such as Google Scholar, eliminating the need for manual calculation.

11.2. Strategies for Increasing the H-index

In the competitive academic environment, researchers may seek to increase their h-index through two main approaches:

1. Self-citation of previous work in new research publications.

2. Increasing the total number of publications, even if each receives only a small number of citations.

11.2.1. Motivations for Self-Citation

Authors may cite their previous work for several reasons (Bartneck & Kokkelmans, 2011; Ioannidis, 2015):
- To update and improve earlier studies.
- To enhance visibility of prior work by linking it in higher-ranked journals.
- To ensure previous findings remain in circulation within the scientific literature.
- To promote new work by drawing attention to earlier publications.
- To revive poorly cited or overlooked studies.
- To strengthen their reputation as an expert within a field.
- To reinforce the methodological soundness of previous work by offering additional supporting examples.
- To increase overall citation counts numerically.

11.2.2. Increasing Publication Volume

Alternatively, even with few citations per paper, a greater number of publications raises the probability of being cited, which in turn contributes to a higher h-index.

11.3. Limitations of the H-index

The applicability of the h-index differs across disciplines. For instance, in the humanities, social sciences, and mathematics, citation practices vary significantly, making direct cross-disciplinary comparisons problematic (Waltman & van Eck, 2012).

The h-index should therefore not be regarded as an optimal, universal mechanism for comparing scholarly impact across fields. Instead, it should be complemented with additional qualitative and quantitative indicators.

11.4. Conclusion

The creation of a national ranking system for higher education institutions in Azerbaijan requires attention to international best practices, particularly the integration of research metrics. The following measures are critical:

- Ensuring universities maintain active, accessible websites that meet international standards.
- Increasing the publication of research outputs in impact factor journals.
- Expanding student and faculty exchange programs with foreign institutions.
- Recruiting highly skilled and productive researchers.
- Providing financial resources and infrastructure to support research.
- Integrating doctoral students and research assistants into institutional research projects.
- Emphasizing scholarly publications in faculty evaluation and promotion processes.

Although the h-index alone has limitations, it remains a more effective tool than raw publication or citation counts, as it balances productivity and impact. It also discourages unsustained research activity, since consistent publication and citation across multiple outputs are required to maintain a high score.

Rankings, therefore, function not only as an external quality assurance mechanism but also as a tool for self-improvement. Universities must interpret their relative positions as feedback for addressing weaknesses and promoting internal reforms. Importantly, the results of rankings should be transparent to government, society, parents, and most critically, prospective students.

Acknowledgement

The author expresses sincere gratitude to the Azerbaijan Institute of Education for institutional support and to colleagues from the Department of the Theory and History of Education for their valuable insights and academic collaboration during the preparation of this research.

Conflict of Interest

The author declares no conflict of interest related to this research.

References

1. Academic Ranking of World Universities (ARWU – ShanghaiRanking Consultancy). (2019, May 7). Retrieved from http://www.shanghairanking.com/resources.html
2. Ali məktəblərin reytinqinin müəyyənləşdirilməsinə start [Launch of university ranking]. (2014, January 7). Həftə içi newspaper.
3. Altbach, P. G. (2011). The past, present, and future of the research university. In P. G. Altbach & J. Salmi (Eds.), The road to academic excellence: The making of world-class research universities (pp. 11–32). World Bank.
4. Asadov A. (2025). Quantitative and Qualitative Criteria of World Literature Samples in General Education School Textbooks. Azerbaijan Journal of Educational Studies. Vol. 711, Issue II, pp. 69–80 DOI: 10.30546/32898065.2025.2.028
5. Asadov, A. (2021). The role of world literature in shaping students' planetary thinking. *Azerbaijan Journal of Educational Studies, 697*(4), 111–119.
6. Asadov, A. (2024). Azerbaijani literature: Literary and philosophical views from Eastern experience in the context of Western thought. *Science, Education and Innovations in the Context of Modern Problems, 6*, 68–80.
7. Aydın, M. S., Kaya, H., & Kete, H. (2017). Features of higher education services and the appearance of higher education services in Turkey. Journal of Awareness, 2(2), 1–24.
8. Azerbaijan | Ranking Web of Universities. (2019, May 6). Retrieved from https://www.webometrics.info/en/Europe/Azerbaijan#content
9. Azerbaijan 2020: A Look into the Future Development Concept. (2012, December 30). Azərbaycan newspaper.
10. Bartneck, C., & Kokkelmans, S. (2011). Detecting h-index manipulation through self-citation analysis. Scientometrics, 87(1), 85–98. https://doi.org/10.1007/s11192-010-0306-5
11. Berlin Principles on Ranking of Higher Education Institutions. (2006, May 9). Retrieved from https://www.che.de/downloads/Berlin_Principles_IREG_534.pdf
12. Bornmann, L., & Daniel, H. D. (2007). What do we know about the h-index? Journal of the American Society for Information Science and Technology, 58(9), 1381–1385. https://doi.org/10.1002/asi.20609
13. Charter of secondary specialized educational institutions. (2019, May 21). Retrieved from https://edu.gov.az/az/page/299/839
14. CHE Excellence Ranking (Center for Higher Education). (2019, May 10). Retrieved from http://www.che-ranking.de/cms/?getObject=613
15. Clark, B. R. (1995). Places of inquiry: Research and advanced education in modern universities. University of California Press.
16. Conference held by Deputy Minister of Education Firudin Gurbanov on reforms in secondary specialized education institutions. (2015, December 8). Retrieved May 16, 2019, from http://bakitexnikikolleci.az/xeberler/7-orta-ixtisas-tehsili-muessiselerinde-tehsil-islahatlarinin-heyata-kechirilmesi-ile-bagli-mushavire.html
17. Council of Higher Education of Turkey. (2007). Turkey's higher education strategy (Publication No. 2007-1). Retrieved May 7, 2019, from http://www.oktemvardar.com/articles/turkiyenin%20yok_strateji_kitabi.pdf
18. Development of the Concept of Conducting the Webometric Ranking of Azerbaijani Universities. (2011). EIF/GAM-1-2011-2(4)-26/05/1-M-26.

19. Egghe, L. (2006). Theory and practice of the g-index. Scientometrics, 69(1), 131–152. https://doi.org/10.1007/s11192-006-0144-7
20. Eurostat. (2019, October 10). Employment rates of young people not in education and training by sex, educational attainment level, and years since graduation. Retrieved from http://appsso.eurostat.ec.europa.eu/nui/show.do
21. Eurostat. (2022). Employment rates of recent graduates. Retrieved from https://ec.europa.eu/eurostat/
22. Hazelkorn, E. (2015). Rankings and the reshaping of higher education: The battle for world-class excellence (2nd ed.). Palgrave Macmillan.
23. Hirsch, J. E. (2005). An index to quantify an individual's scientific research output. Proceedings of the National Academy of Sciences, 102(46), 16569–16572. https://doi.org/10.1073/pnas.0507655102
24. Hirsch, J. E. (2005). An index to quantify an individual's scientific research output. Proceedings of the National Academy of Sciences, 102(46), 16569–16572. https://doi.org/10.1073/pnas.0507655102
25. Ioannidis, J. P. A. (2015). A generalized view of self-citation: Direct, co-author, collaborative, and coercive. Journal of Psychosomatic Research, 78(1), 7–11. https://doi.org/10.1016/j.jpsychores.2014.11.008
26. Kalaycı, N. (2008). The effect of differences in students' perceptions on scoring in evaluation surveys of higher education teaching. Educational Administration: Theory and Practice, 54, 235–275.
27. Leiden Ranking. (2019, May 9). Centre for Science and Technology Studies, Leiden University. Retrieved from http://www.cwts.nl/ranking/LeidenRankingWebSite.html
28. Mammadov, H., & Huseynov, H. (2014, January 8). Some implementation mechanisms of the State Strategy for the Development of Education. Azərbaycan, (1), 6.
29. Mardanov, M. (2009, May 2). 525-ci qəzet, 10–11. Retrieved June 9, 2019, from http://anl.az/down/meqale/525/525_may2009/77276.htm
30. Model Charter of Secondary Specialized Educational Institutions. (2011, January 14). Decision No. 7 of the Cabinet of Ministers of the Republic of Azerbaijan. Retrieved May 9, 2019, from https://edu.gov.az/az/page/74/3244
31. OECD. (2019). Education at a glance 2019: OECD indicators. OECD Publishing. https://doi.org/10.1787/f8d7880d-en
32. Özer, M., Gür, B. S., & Küçükcan, T. (2009). Quality assurance in higher education. SETA Publications X, 1st ed., Pelin Ofset, Ankara.
33. Performance Ranking of Scientific Papers for World Universities (HEEACT, Taiwan). (2019, May 9). Retrieved from http://nturanking.lis.ntu.edu.tw/
34. President of the Republic of Azerbaijan Ilham Aliyev's address to the participants of the XIII Congress of Azerbaijani Teachers. (2008). Azərbaycan məktəbi, (6).
35. QS World University Rankings (Quacquarelli Symonds). (2019, January 10). Retrieved from https://www.topuniversities.com/university-rankings
36. Ranking Web of World Universities (Cybermetrics Lab, CSIC, Spain). (2019, May 20). Retrieved from http://www.webometrics.info/en
37. Ratings of higher education. (2019, May 9). IQ Consultancy. Retrieved from https://www.iqconsultancy.ru/articles/reytingi-vysshego-obrazovaniya/
38. Reform Program in the Field of Education of the Republic of Azerbaijan. (2009). Təhsil xəbərləri, (4), 5–40.
39. Regulation on semester examinations and credits of students in secondary specialized state educational institutions. (2019, May 12). Retrieved from https://edu.gov.az/az/page/299/842
40. Research on the rankings of universities of the Republic of Azerbaijan. (2019, May 7). Retrieved from http://www.rating.edu.az/index.php/az/layihe-haqqinda
41. SCImago Ranking. (2019, May 9). SCImago Institutions Rankings. Retrieved from https://www.scimagoir.com

42. Shin, J. C., & Toutkoushian, R. K. (2011). The past, present, and future of university rankings. In J. C. Shin, R. K. Toutkoushian, & U. Teichler (Eds.), University rankings: Theoretical basis, methodology and impacts on global higher education (pp. 1–16). Springer. https://doi.org/10.1007/978-94-007-1116-7_1
43. State standards for general secondary education in the Republic of Azerbaijan. (2009, May 20). Retrieved May 20, 2019, from http://anl.az/down/meqale/525/525_may2009/77276.htm
44. State Strategy for the Development of Education in the Republic of Azerbaijan. (2013, October 25). Azərbaycan müəllimi newspaper, (41).
45. Times Higher Education (THE) World University Rankings. (2019, May 14). Retrieved from https://www.timeshighereducation.com/world-university-rankings
46. U21 Ranking of National Higher Education Systems. (2019, January 8). Retrieved from https://gtmarket.ru/ratings/u21-ranking-of-national-higher-education-systems/info
47. UNESCO. (2006). Berlin principles on ranking of higher education institutions. UNESCO-CEPES.
48. Universitas 21. (2019, May 11). U21 Ranking of National Higher Education Systems. Retrieved from https://universitas21.com/rankings
49. UT Dallas School of Management. (2019, May 10). UTD Top 100 Business School Research Rankings. Retrieved from http://jindal.utdallas.edu/the-utd-top-100-business-school-research-rankings/index.php
50. Waltman, L., & van Eck, N. J. (2012). The inconsistency of the h-index. Journal of the American Society for Information Science and Technology, 63(2), 406–415. https://doi.org/10.1002/asi.21678
51. World Higher Education Database (WHED). International Association of Universities/UNESCO. (2019, May 10). Retrieved from http://www.unesco-whed.org/
52. Yashar, A. (2013). Development of a national mechanism for conducting the ranking of Azerbaijani universities. Bulletin of Baku University, Series of Physical and Mathematical Sciences, (3), 112–117.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

La communication étudiante en français sur Facebook : entre brièveté, expressivité et créativité linguistique

Student Communication in French on Facebook: Between Brevity, Expressiveness, and Linguistic Creativity

Boulsane Réda
Maitre-Assistant -A
Université Larbi Ben M'hidi – Oum el Bouaghi, Laboratoire DECLIC
Algérie
Email: reda.boulsane@univ-oeb.dz , Orcid: https://orcid.org/0000-0002-8460-691X

Saker Amina
Maitre de conférences -A
Université Larbi Ben M'hidi – Oum el Bouaghi, Laboratoire DECLIC
Algérie
E-mail: amina.saker@univ-oeb.dz, Orcid: https://orcid.org/0009-0009-5373-8299

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Brièveté, Communication digitale, Etudiants, Expressivité, Facebook, Innovation linguistique

Abstract
S'inscrivant dans le champ de la sociolinguistique numérique, cette étude vise à examiner les pratiques communicationnelles des étudiants en français sur Facebook. Elle met en évidence une triple dynamique caractéristique de ces usages : la recherche de brièveté imposée par les contraintes de la plateforme, le besoin d'expressivité propre à cette population, et l'émergence d'une créativité linguistique spécifique aux environnements numériques. L'objectif est d'analyser les mécanismes par lesquels ces trois dimensions apparemment contradictoires s'articulent dans la communication étudiante en ligne, et de démontrer comment cette oscillation permanente peut générer des formes communicationnelles hybrides où les contraintes de brièveté incitent les utilisateurs à développer des stratégies expressives originales, transformant Facebook en véritable laboratoire d'innovation linguistique spontanée. L'analyse interroge ainsi les mutations contemporaines de la langue française dans les espaces digitaux et démontre comment ces jeunes locuteurs réinventent continuellement leur rapport à la langue française dans l'espace numérique, ce qui produit des pratiques communicationnelles qui dépassent les simples adaptations techniques pour devenir de véritables créations linguistiques collectives, preuve d'une appropriation créative des outils numériques.

Citation. Boulsane, R., Saker. A., (2025). La communication étudiante en français sur Facebook : entre brièveté, expressivité et créativité linguistique. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 649–660. https://doi.org/10.56352/sei/8.11.51

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.01.2025 | Accepted: 17.05.2025 | Published: 05.09.2025 (available online)

Introduction

De nos jours, la communication digitale est bouleversée par la multiplication fulgurante des réseaux sociaux. Désormais omniprésents, ces plateformes s'imposent dans tous les domaines: stratégies marketing, communication politique et vie quotidienne. Ils constituent aujourd'hui des outils incontournables d'internet, et occupent une place centrale dans nos interactions numériques, quelle que soit l'audience visée.

Devenus indispensables au quotidien d'une immense partie de la population mondiale, ces réseaux évoluent constamment et transforment profondément nos modes de communication, d'information, de travail et de

consommation, tant dans la sphère personnelle que professionnelle. En soulignant que : *« les réseaux sociaux sont des médias sociaux devenus incontournables qui désignent un ensemble de services permettant de développer des conversations et des interactions sociales sur internet ou en situation de mobilité »*, Cavazza (2009) met en évidence la position centrale qu'ont acquise les réseaux sociaux dans notre quotidien. Ces plateformes sont devenues incontournables, touchant tous les aspects de notre vie : information, divertissement et communications personnelles. Cette omniprésence numérique a profondément modifié nos pratiques sociales, culturelles et économiques, et par conséquent, a redéfini notre rapport au monde et aux autres.

Définis par Rissoan comme étant : *« des sites internet qui répondent à un besoin de consommation de médias (vidéos, audio, textes, animations) mais dans un contexte de partage et d'échange »* (Rissoan, 2012, p : 26), les réseaux sociaux ont connu, depuis leur apparition et leur mise en application, une forte croissance et ont fait couler beaucoup d'encre. Facebook, X (ex Twitter), Instagram, Snapchat ont, en effet, généré un engouement tellement important aussi bien chez les particuliers, chez les professionnels, que chez les jeunes générations, particulièrement les étudiants qui constituent une population largement connectée.

En janvier 2025, Facebook compte plus de 3 milliards d'utilisateurs actifs mensuels dans le monde, ce qui en fait la plateforme sociale le plus utilisée à l'échelle mondiale et s'ouvre à de nouveaux publics de sorte qu'il soit rare de trouver un domaine où Facebook n'intervient pas. Par conséquent, la sphère estudiantine en a été touchée et Facebook s'est même implanté dans les habitudes des étudiants. A-L. Raffestin le confirme en disant que : *« Comme dans bien d'autres domaines, le réseau social de Mark Zuckerberg est le plus utilisé par les étudiants, mais aussi par leurs professeurs »* (Raffestin, 2011)

Il sera ainsi pour eux ce qu'ils veulent en faire dans la mesure où les outils proposés sont adaptés à leurs besoins de communication, d'information ou même de divertissement. Il est à noter que grâce à Facebook et aux nombreux outils de communication qu'il renferme, les étudiants développent leurs compétences à communiquer et peuvent donc s'ouvrir au savoir et partager l'information.

1. Problématique et objectifs de la recherche

Dans le cadre de cette étude, il est important de comprendre comment les réseaux sociaux numériques, en l'occurrence Facebook, ont profondément transformé les pratiques communicationnelles des jeunes étudiants. Facebook, en tant que plateforme pionnière du web social, a créé un espace de communication inédit où se déploient de nouvelles formes d'expression linguistique. La communication étudiante en français sur cette plateforme présente des caractéristiques singulières qui méritent une analyse approfondie : elle oscille entre contraintes techniques, besoins expressifs et innovations créatives.

Cette problématique soulève ainsi une question capitale, à laquelle il serait intéressant de pouvoir répondre : « *Comment les étudiants en français articulent-ils brièveté, expressivité et créativité linguistique dans leurs pratiques communicationnelles sur Facebook ?*»

De cette question principale, découlent des questions secondaires qui ouvrent plusieurs axes d'analyse structurés autour d'une triple dimension (brièveté, expressivité, créativité) :

- Comment les étudiants gèrent-ils la brièveté dans leurs messages tout en assurant la clarté du contenu ?
- Quels types de procédés expressifs sont privilégiés dans leurs échanges ?
- Quelles formes de créativité linguistique émergent dans leurs communications ?

Dans le but d'apporter des réponses à ces questions qui permettent d'explorer systématiquement les trois dimensions du sujet tout en tenant compte des spécificités du public étudiant francophone et du medium Facebook comme espace de communication, nous avancerons les hypothèses suivantes, qui feront par la suite l'objet d'une validation ou d'une réfutation à partir d'une enquête de terrain :

1. Les étudiants ont recours à des formes brèves, souvent elliptiques, pour gagner en rapidité et s'adapter aux usages numériques.

2. L'expressivité est renforcée par des procédés paralinguistiques (emojis, ponctuation excessive, majuscules), qui pallient l'absence de ton ou de gestuelle.

3. La créativité linguistique résulte de l'interaction entre les contraintes de la concision, l'invention de néologismes contextuels et l'alternance codique.

Dans le présent travail, il convient de souligner la diversité et la multiplicité des objectifs poursuivis. En effet, ils ne se limitent pas à un seul aspect ; ils s'entrelacent et se complètent, ce qui reflète la complexité du sujet traité. Cette diversité d'objectifs témoigne de la richesse et de la profondeur de la problématique abordée et permet d'en appréhender les multiples dimensions avec rigueur. Nous analyserons ainsi la manière dont ces différentes visées s'articulent pour étayer et orienter précisément notre réflexion. Dans la perspective de mieux comprendre comment Facebook, en tant que plateforme sociale, modifie les pratiques langagières des étudiants francophones, nous cherchons d'abord à analyser les caractéristiques linguistiques propres à la communication étudiante en français sur Facebook, en soulignant l'influence des contraintes techniques de la plateforme sur les formes d'expression utilisées. Ensuite, nous examinons les besoins expressifs des étudiants dans leurs échanges et leur incidence sur les choix linguistiques. Enfin, nous nous attachons à identifier et décrire les innovations créatives en matière d'expression développées dans ce contexte. Ces objectifs permettent chacun d'éclairer un aspect spécifique de cette communication, en lien avec les contraintes, les besoins et les formes d'innovation évoqués.

Notre travail s'organisera en deux parties distinctes mais nettement complémentaires. Le cadre conceptuel s'appuiera sur plusieurs axes permettant d'analyser les pratiques langagières des étudiants en contexte numérique. Il pourrait s'articuler autour des axes suivants : l'usage de Facebook dans le milieu estudiantin, les fonctions sociales et communicationnelles de cette plateforme, ainsi que les spécificités des interactions numériques. En résumé, notre cadre conceptuel articulera des concepts issus de la linguistique numérique, de la pragmatique, de la sociolinguistique, et des sciences de la communication, afin d'explorer comment les étudiants utilisent le français sur Facebook dans des formes brèves, expressives et créatives. Sur le plan méthodologique, un dispositif pertinent sera mis en œuvre pour répondre aux objectifs de la recherche : en effet, l'investigation repose sur un questionnaire adressé à un public d'étudiants afin de mieux cerner les stratégies mises en œuvre dans leurs échanges numériques sur Facebook.

Enfin, une conclusion générale viendra dresser un bilan des résultats obtenus et apprécier leur portée au regard des hypothèses formulées. En effet, la mise en relation des résultats avec les objectifs de notre travail nous donnera l'opportunité non seulement de dégager de nouvelles interrogations et soulever des problématiques inédites, mais aussi ouvrir des perspectives et tracer des chemins novateurs pour la recherche, élargissant ainsi le champ des investigations futures.

2. Cadre conceptuel

Dès sa création, Facebook s'est présenté comme un espace dédié à la socialisation en ligne. Toutefois, il a rapidement dépassé la fonction initiale de mise en relation personnelle pour devenir un outil polyvalent. À l'origine conçu comme un réseau social électronique visant principalement à connecter les individus, Facebook a considérablement évolué pour offrir aujourd'hui une gamme étendue de services intégrés ou liés à sa plateforme. *« Facebook n'est pas dédié à une utilisation particulière, chacun l'utilise dans le cadre d'objectifs variés allant du jeu à la plate-forme de travail professionnelle »* (Barbe & Delcroix, 2008, p : 119). Ainsi, il ne se réduit plus à un simple outil de communication. Le fait qu'il n'a pas une fonction unique ou strictement définie en fait une plate-forme multifonctionnelle, capable de répondre à des besoins très divers selon les utilisateurs et constitue désormais un véritable écosystème complexe, ayant des dimensions ludiques, sociales, politiques et économiques.

L'une des caractéristiques fondamentales des grandes plateformes numériques, notamment Facebook, réside dans leur plasticité, qui se manifeste par la multiplicité de leurs fonctions. Ainsi, nous nous pencherons sur les différentes fonctionnalités de Facebook en tant que plateforme de communication, d'information et de divertissement, en mettant en exergue la façon dont ces trois dimensions s'articulent et se renforcent mutuellement dans les usages numériques.

2.1. La communication étudiante en contexte numérique

Parmi les réseaux sociaux qui grouillent sur la toile, les étudiants privilégient souvent Facebook pour sa simplicité, sa rapidité et son efficacité. Ses fonctions variées en matière de communication et d'accès à l'information facilitent le travail collaboratif, réduisent les distances et font gagner du temps. Outil central du quotidien, il leur permet de rester en contact, de publier du contenu, mais aussi d'échanger sur les cours, d'interagir sur les messages des autres, de créer des groupes de travail et de s'entraider. Selon Jenkins : *« Les nouveaux médias sont participatifs, interactifs et convergents : les utilisateurs ne se contentent plus de consommer l'information, ils la produisent, la*

commentent, la diffusent. » (Jenkins, 2013, p : 79). Cette dynamique s'observe chez les étudiants qui, à travers ces interactions régulières, développent simultanément leurs compétences linguistiques et sociales. Ainsi, si Facebook s'impose d'abord comme un espace privilégié pour la communication et la collaboration entre étudiants, il dépasse rapidement ce simple cadre utilitaire. Plus qu'un outil fonctionnel, il devient un véritable terrain d'expression personnelle et de créativité, où échanges brefs mais efficaces permettent de tisser des liens sociaux tout en stimulant le développement linguistique et les compétences sociales. Cardon, en soulignant que *: « Le temps des réseaux sociaux est un temps de l'instantané, du flux, du direct. Il impose une logique de réactivité permanente »* (Cardon, 2010, p : 55), met en évidence l'un des traits fondamentaux de l'environnement numérique contemporain : la temporalité propre aux réseaux sociaux. Contrairement aux médias traditionnels, les réseaux sociaux valorisent la rapidité, l'instantanéité et la mise à jour constante. Par ailleurs, il apparait que les réseaux sociaux modifient notre rapport au temps, en incitant à une réaction immédiate : il faut répondre vite, publier sans attendre, commenter dans l'instant. Si cette dynamique favorise la spontanéité et l'interaction, elle instaure également une pression continue sur les étudiants qui se voient contraints d'adopter certaines stratégies langagières et communicationnelles adaptées à ce rythme : privilégier la brièveté pour capter l'attention rapidement, recourir à l'expressivité pour se démarquer dans le flot d'informations, et mobiliser une créativité linguistique afin de produire des messages attractifs et mémorables.

Pour Balagué & Fayon : *« s'inscrire sur un réseau social peut répondre au besoin d'appartenance d'un individu à une communauté qui partage ses intérêts, voire son langage, avec laquelle il a des affinités »* (Balagué & Fayon, 2010, p : 36). Leur analyse révèle que les étudiants se tournent vers Facebook pour intégrer des groupes en phase avec leurs intérêts, leurs codes et leur langage. Au-delà du simple maintien des liens sociaux, ils y trouvent un espace où leurs affinités culturelles, linguistiques ou académiques sont reconnues. La plateforme favorise l'émergence de modes de communication spécifiques (abréviations, références communes, humour codé) qui consolident ce sentiment d'appartenance. Ces échanges contribuent à façonner des identités numériques ainsi qu'une langue hybride, entre oral et écrit. Ainsi, l'engagement dans ces communautés dépasse la connexion sociale : il participe à l'élaboration d'une culture jeune et numérique distincte.

3. Cadre méthodologique

3.1. Contexte de l'étude et public cible

Dans le contexte de l'étude *« La communication étudiante en français sur Facebook : entre brièveté, expressivité et créativité linguistique »*, l'enquête se déroule à une époque marquée par l'omniprésence des réseaux sociaux dans la vie étudiante. Facebook demeure une plateforme de choix pour les étudiants de français souhaitant échanger, s'informer et se socialiser. Dans cet environnement numérique, les échanges écrits se caractérisent souvent par leur concision (brièveté), une grande expressivité manifestée à travers des émojis, des images ou une ponctuation singulière, ainsi qu'une créativité linguistique (emploi de néologismes, jeux de mots, variantes orthographiques, mélange de registres, etc.) qui reflète l'agilité de la jeunesse à s'approprier les codes du numérique.

Le public cible de cette enquête est constitué d'étudiants en français, principalement inscrits dans l'enseignement supérieur, âgés de 20 à 25 ans, utilisant activement Facebook pour des communications personnelles ou académiques. Ce groupe comprend 50 étudiants inscrits en 3ème année licence au département de français à l'université Larbi Ben M'hidi en contexte universitaire francophone. L'enquête vise ainsi à explorer la façon dont ces étudiants adaptent la langue française aux contraintes et possibilités du médium numérique.

3.2. Présentation du protocole d'enquête

Afin de répondre de manière rigoureuse et systématique aux questions de recherche formulées, il est essentiel de définir clairement le protocole d'enquête déployé. Ce protocole décrit les étapes méthodologiques et les outils choisis pour la collecte et l'analyse des données, qui garantissent ainsi la cohérence, la validité et la fiabilité des résultats obtenus. Il s'appuie principalement sur un questionnaire ciblé, qui permettra une compréhension approfondie des stratégies de communication numérique adoptées par les étudiants sur Facebook.

Pour garantir la cohérence de l'échantillon, nous avons adressé un questionnaire (en ligne et en présentiel) à 50 étudiants ayant le même profil. Le questionnaire est, par définition, un instrument quantitatif, mais il peut aussi intégrer des questions ouvertes (approche mixte). Il a pour objectif de collecter auprès des étudiants concernés par l'analyse du corpus des informations sur leurs pratiques et stratégies communicationnelles sur Facebook. Ce questionnaire se compose de questions fermées (QCM, échelles de Likert) pour quantifier les pratiques, opinions et ressentis mais aussi de questions ouvertes pour permettre une expression détaillée et recueillir des exemples ou des explications.

3.3. Présentation et analyse des résultats

Cette partie expose de manière synthétique les données issues de l'analyse du questionnaire. L'analyse vise à mettre en évidence les principales tendances et à interpréter les stratégies de communication des étudiants sur Facebook, afin de répondre clairement aux objectifs de la recherche.

Par le biais d'un questionnaire que nous avons conçu à l'intention des étudiants de 3ème année licence, cette étude vise à recueillir des données quantitatives et qualitatives permettant de cerner les pratiques communicationnelles des étudiants dans un environnement numérique. Pour des raisons méthodologiques, le questionnaire que nous avons conçu et les questions formulées (09 questions) portent exclusivement sur les trois dimensions essentielles de notre sujet : la brièveté, l'expressivité et la créativité linguistique. Ainsi, nous avons délibérément évité d'aborder des questions générales concernant le profil des utilisateurs ou leur usage global de Facebook, afin de garder nos interrogations ciblées et strictement orientées vers ces trois axes spécifiques.

- **Question N°01** : *Principalement, vous utilisez Facebook pour : (plusieurs réponses possibles)*

Les résultats obtenus à cette question révèlent des tendances significatives quant à l'usage que font les étudiants de la plateforme Facebook. On note, tout d'abord, une prédominance marquée des dimensions interactives et collaboratives. Les résultats montrent que Facebook est principalement utilisé par les étudiants pour communiquer avec des amis (85%), partager du contenu (90%) et participer à des groupes d'étudiants (90%). L'utilisation pour suivre l'actualité ou des pages d'intérêt est pratiquement inexistante (10%). Cela indique que la plateforme remplit avant tout des fonctions sociales et collaboratives, au détriment de ses dimensions informationnelles. Ce qui illustre la plasticité des usages de la plateforme selon les besoins sociaux et contextuels des usagers.

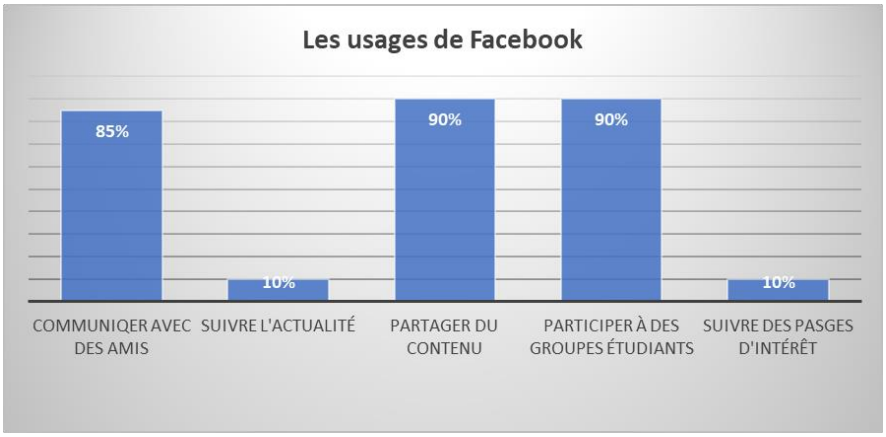


Figure N°01

- **Question N°02** : *En moyenne, vos publications/commentaires sur Facebook contiennent :*

[ ] 1-10 mots [ ] 11-30 mots [ ] 31-50 mots [ ] Plus de 50 mots

L'analyse des résultats concernant la longueur moyenne des publications ou commentaires sur Facebook par les étudiants révèle que la grande majorité des étudiants (44 sur 50, soit 88%) publie ou commente en utilisant entre 1 et 10 mots. Cela indique une forte tendance à privilégier des messages très brefs et probablement concis. Seuls 06 étudiants (12%) utilisent entre 11 et 30 mots, tandis qu'aucun étudiant n'atteint ou dépasse 31 mots dans ses publications ou commentaires. Cela suggère que les formats plus développés ou argumentés sont très peu utilisés sur cette plateforme dans ce groupe. Ce phénomène peut refléter l'usage très rapide et souvent spontané de Facebook, où l'attention est limitée et les échanges sont plus informels. Cela peut également témoigner de pratiques communicationnelles actuelles qui privilégient la brièveté, l'impact rapide et la simplicité du message. L'absence de publications plus longues ne signifie pas nécessairement un manque d'expression ou de profondeur, mais peut indiquer que Facebook est davantage perçu comme un espace de communication synthétique.

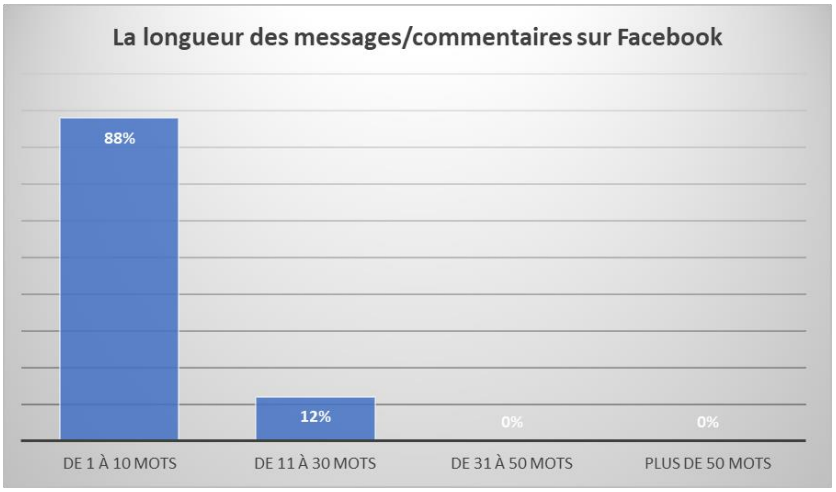


Figure N°02

- **Question N°03** : *Utilisez-vous des abréviations dans vos communications Facebook ?*

[ ] Très souvent [ ] Souvent [ ] Parfois [ ] Rarement [ ] Jamais

Les résultats montrent que l'utilisation des abréviations dans les communications sur Facebook est extrêmement fréquente parmi les étudiants. En effet, 42 sur 50 (84%) déclarent les utiliser très souvent, tandis que 5 étudiants (10%) les utilisent souvent, et seulement 3 (6%) disent les employer parfois. Aucun étudiant ne rapporte une utilisation rare ou nulle des abréviations. Cette tendance souligne l'importance des abréviations comme outil privilégié pour gagner du temps et économiser des caractères dans des échanges généralement rapides et informels. Elle illustre également une adaptation aux contraintes et aux codes spécifiques de la communication en ligne, où la rapidité, la simplicité et la fluidité du message priment.

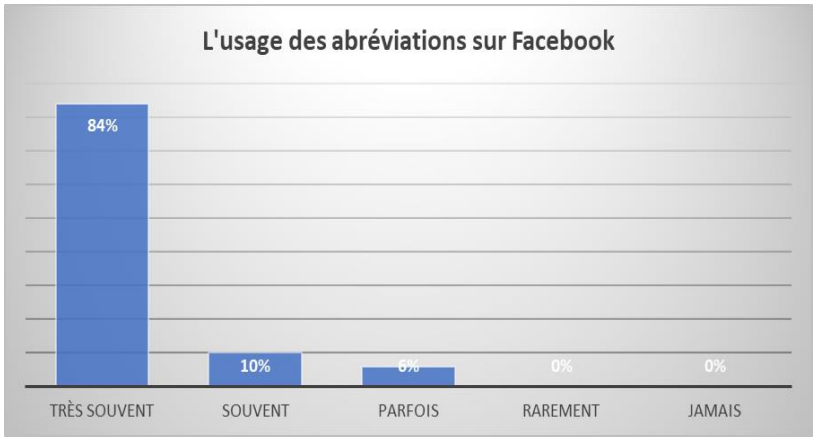


Figure N°03

- *Si oui, quelles abréviations utilisez-vous le plus ? (donnez 3-5 exemples) :*

Oui, les étudiants utilisent fréquemment des abréviations dans leurs messages et discussions sur Facebook. Certaines abréviations sont communes à tous les étudiants, comme « slt, bjr, bsr, bn8, cv, tkt, nrc, » .Ces raccourcis facilitent et accélèrent la communication car ils sont largement compris. En revanche, les étudiants développent des abréviations plus personnelles. (grv) (tfq) (doc pour document). Ces abréviations individuelles les aident à gagner du temps tout en restant clair et intelligible. Ainsi, il y a toujours un équilibre entre abréviations partagées par tous les étudiants et celles plus personnalisées qui répondent à des besoins spécifiques.

- **Question N°04** : *Selon vous, la brièveté sur Facebook est due à : (plusieurs réponses possibles)*

L'analyse des réponses des étudiants à la question de la brièveté des messages sur Facebook montre que la majorité (43 sur 50) associe cette concision à la nécessité de communiquer rapidement et au manque de temps. Par ailleurs, un nombre significatif (40 sur 50) évoque l'influence des habitudes développées sur les réseaux sociaux. Ces résultats soulignent que, sur Facebook, la brièveté est perçue avant tout comme un moyen de communication efficace, adapté à un contexte où l'attention est fragmentée et la réactivité valorisée. L'usage fréquent des réseaux sociaux renforce cette tendance en favorisant un style de communication direct, rapide et accessible, dans lequel les messages courts suscitent davantage d'engagement. Bien que mentionnée par seulement un étudiant sur cinq, la lisibilité pour le lecteur est également reconnue comme un avantage, mais reste un facteur secondaire. En revanche, l'influence d'autres langues, comme l'anglais, est jugée négligeable. En somme, la brièveté des messages sur Facebook s'explique principalement par les pratiques numériques et la pression temporelle, en lien avec les usages et les comportements spécifiques aux environnements des réseaux sociaux.

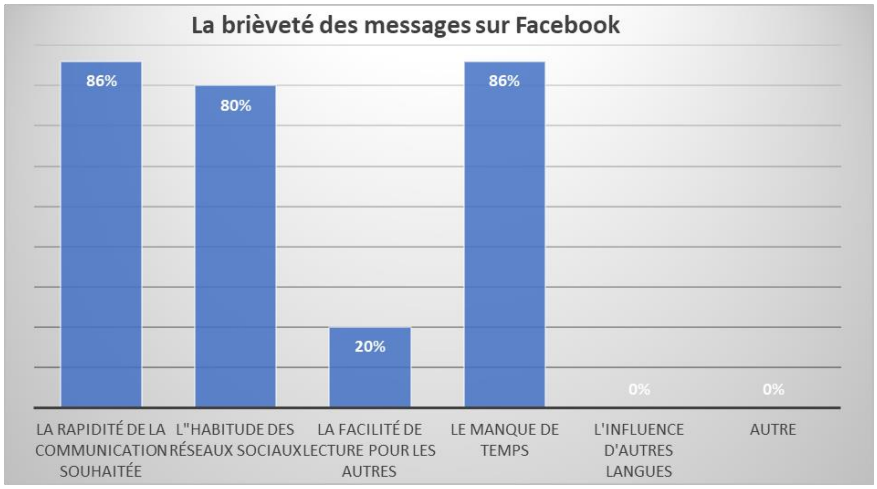


Figure N°04

- **Question N°05** : *Quels éléments employez-vous pour rendre vos messages sur Facebook plus expressifs ?*

Les réponses étaient très variées, ce qui montre l'intérêt d'une question ouverte. En laissant chacun s'exprimer librement, ce genre de question permet de recueillir de nombreux points de vue et expériences différents. Les résultats montrent que les étudiants utilisent majoritairement plusieurs éléments pour rendre leurs messages sur Facebook plus expressifs. Les émoticônes/emojis sont employés par 96% des étudiants, ce qui souligne leur rôle essentiel pour transmettre des émotions visuelles. De même, 88% des étudiants utilisent des points d'exclamation ou d'interrogation multiples, démontrant l'importance de la ponctuation répétée pour intensifier le ton ou l'émotion du message. Les majuscules sont également utilisées par 80% d'entre eux, et servent à simuler une expression forte ou un « cri » écrit. Enfin, la répétition de lettres, pratiquée par 84% des étudiants, permet de moduler la prononciation virtuelle des mots et d'accentuer l'enthousiasme ou l'approbation (ex : Ouiiiiiiii, Nooooon, Siiiiiii, Bravoooo). Ces résultats illustrent la tendance des jeunes à combiner différents procédés graphiques pour compenser l'absence d'indices non verbaux et enrichir la communication écrite sur les réseaux sociaux.

Exemples

Etudiant 05 : j'utilise principalement les emojis, 😀😊qui ajoutent de l'émotion 🥹😍et nuancent le ton du message 👍😜😡.

Etudiant 14 : J'intègre aussi parfois des GIFs, des stickers ou des images pour renforcer l'impact visuel du texte et transmettre plus clairement mes sentiments.

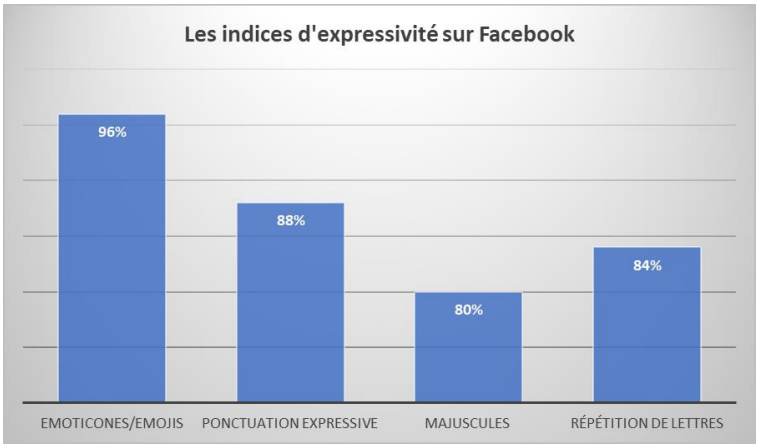


Figure N°05

Etudiant 23 : Les effets de texte (comme les confettis ou les cœurs dans Messenger) permettent également d'animer les messages et de les rendre plus vivants.

- **Question N°06** : *Les émoticônes/emojis vous permettent principalement de : (plusieurs réponses possibles)*

Les résultats à cette question montrent que les émoticônes ou emojis jouent avant tout un rôle dans l'expression et la clarification des émotions lors de la communication écrite. En effet, 90% des répondants estiment qu'ils permettent principalement d'exprimer des émotions, et autant considèrent qu'ils rendent le message plus sympathique. Par ailleurs, 86% soulignent leur utilité pour clarifier le ton, ce qui met en évidence la nécessité d'accompagner le texte de signes visuels pour éviter les malentendus. Remplacer des mots est aussi une utilisation répandue (84%), ce qui suggère que les emojis sont également perçus comme une forme condensée et expressive du langage écrit. En revanche, très peu (20%) les utilisent pour gagner de l'espace, ce qui reste marginal par rapport aux autres fonctions. Ces résultats traduisent donc une forte valorisation des emojis comme outils de nuance, d'expressivité et de convivialité dans l'échange numérique.

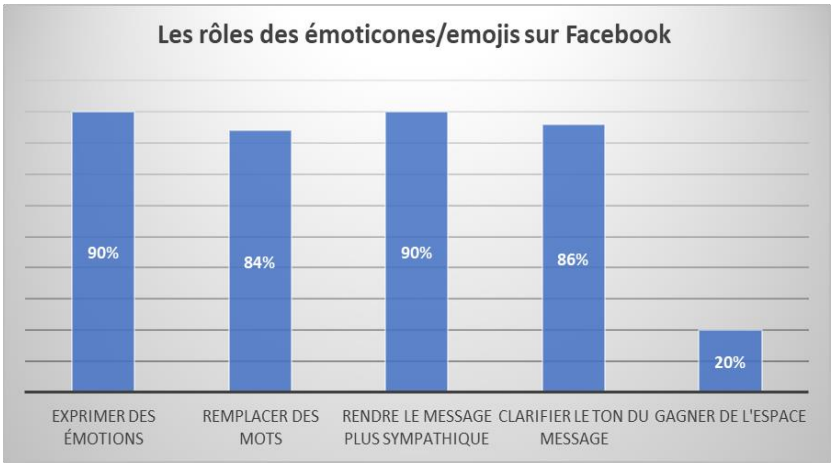


Figure N°06

- **Question N°07** : *Créez-vous parfois de nouveaux mots ou expressions sur Facebook ?*

[ ] Très souvent [ ] Souvent [ ] Parfois [ ] Rarement [ ] Jamais

Les résultats montrent que les avis sont partagés quant à la fréquence de création de nouveaux mots, aucune pratique ne fait l'unanimité parmi les 50 étudiants interrogés. Une partie des répondants (25 étudiants, soit 50%) adoptent une approche occasionnelle à rare de cette créativité linguistique, avec 13 étudiants déclarant le faire "parfois" et 12 "rarement". Une minorité significative (17 étudiants, soit 34%) manifeste une tendance plus active à

l'innovation lexicale, qui se répartit entre ceux qui créent "très souvent" (7 étudiants) et "souvent" (10 étudiants) de nouveaux termes. À l'opposé, seulement 8 étudiants (16%) affirment ne jamais s'engager dans cette pratique créative. Ces données démontrent que la plateforme Facebook stimule effectivement la créativité linguistique chez une grande majorité des étudiants (84%), même si l'intensité de cette créativité varie considérablement, et reflète probablement les différences individuelles en matière d'expression créative et d'engagement sur les réseaux sociaux. Pour illustrer cette créativité étudiante, les contraintes méthodologiques nous amènent à sélectionner quelques exemples représentatifs plutôt qu'une liste exhaustive : **Etudiant 03 :** boubouler (rigoler beaucoup), **Etudiant 07 :** Facebookeuse, likeur, postage, **Etudiant 16 :** chocolover, selfiteur, noctiréviseur, **Etudiant 22 :** Jamo jamaiqua, scrollage, batolusse, **Etudiant 29 :** snapouk, révisthon, **Etudiant 35 :** Madridiste, snapper, **Etudiant 38 :** tiktoker, instagramer, **Etudiant 44** : Notif, com.

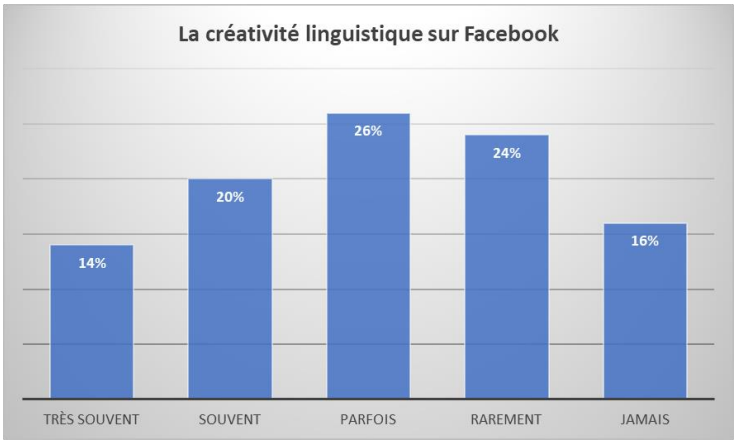


Figure N° 07

- **Question N°08** : *Mélangez-vous le français avec d'autres langues dans vos communications Facebook ?*

Les résultats révèlent que tous les étudiants interrogés combinent le français avec d'autres langues dans leurs échanges sur Facebook : 90 % le font régulièrement, 10 % de manière occasionnelle. Aucun ne déclare utiliser exclusivement le français, ce qui confirme l'omniprésence du multilinguisme sur cette plateforme. Les langues les plus fréquemment associées au français sont l'arabe et l'anglais, ce qui illustre une réalité linguistique marquée par la coexistence et l'interaction de ces idiomes dans les communications quotidiennes. Ce recours à plusieurs langues s'explique par la diversité culturelle des étudiants, l'influence internationale de l'anglais et la dimension identitaire et sociale de l'arabe. L'alternance codique, ou code-switching, apparaît ainsi comme une pratique spontanée et un moyen d'adaptation aux différents contextes et interlocuteurs rencontrés sur les réseaux sociaux.

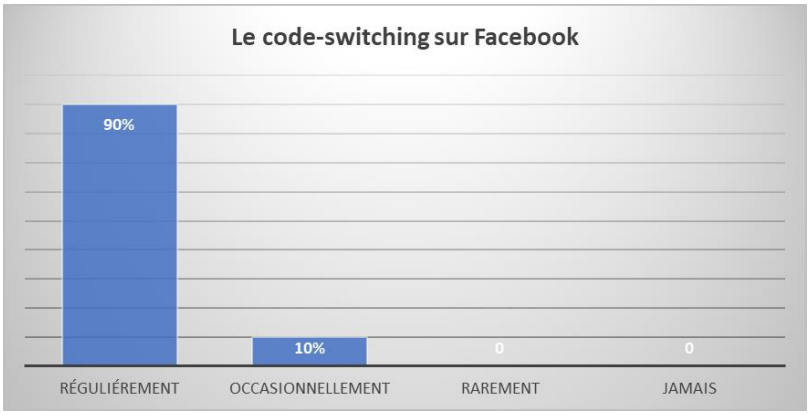


Figure N°08

- **Question N°09** : *En fonction de quoi (de qui) adaptez-vous votre style d'écriture sur Facebook ?*

Etant une question ouverte, elle suscite une grande diversité de réponses. Cette variété souligne l'importance d'une analyse qualitative approfondie pour saisir les nuances des stratégies d'adaptation du style d'écriture sur Facebook. Les étudiants adaptent leur style d'écriture sur Facebook en fonction de plusieurs facteurs. Tout d'abord, ils tiennent compte de la personne à qui ils s'adressent, qu'il s'agisse d'amis, de famille, d'enseignants ou de collègues, ce qui influence le niveau de formalité et le choix du langage. Le sujet de la discussion joue également un rôle important, car il permet de distinguer les échanges personnels des communications plus académiques ou professionnelles. Par ailleurs, l'importance du message, ainsi que le groupe ou la page où la publication est faite, modulent cette adaptation. Les relations de proximité avec le destinataire, la langue utilisée (français, arabe, anglais ou un mélange), ainsi que le contexte culturel ou les habitudes du public visé, sont aussi déterminants. Enfin, les conditions d'écriture, comme l'heure, le dispositif employé, ou la nécessité d'utiliser emojis ou abréviations, viennent compléter cette variété d'adaptations, et montrent une flexibilité langagière en fonction des interlocuteurs, des situations et des objectifs communicationnels.

4. Discussion et interprétation des résultats

Au terme de l'analyse des résultats issus du questionnaire adressé aux étudiants, nous pouvons dresser le bilan suivant :

Les étudiants de français déploient une panoplie de techniques pour maximiser l'efficacité communicationnelle de leurs messages courts. - *L'abréviation* constitue la stratégie la plus répandue. En fait, Les abréviations ne se limitent pas aux mots simples "tjrs" pour "toujours", "qd" pour "quand" mais s'étendent aux expressions complexes "tlm" pour "tout le monde", "stp" pour "s'il te plaît", "rdv" pour "rendez-vous"‟, "tfq" pour "tu fais quoi ?"‟. Ces contractions ne relèvent pas uniquement de la nonchalance linguistique mais elles créent un lexique spécialisé reconnu par la communauté étudiante témoignant d'une véritable économie scripturale. - *La troncation* représente une autre modalité de condensation : "prof" pour "professeur", "notif" pour "notification", "com" pour "commentaire". Ces formes raccourcies créent une certaine complicité et marquent l'appartenance à la communauté étudiante. - *L'ellipse syntaxique* permet également de réduire la longueur des énoncés tout en préservant leur intelligibilité. Les articles, pronoms et auxiliaires sont fréquemment omis : "Cours annulé demain" plutôt que "Le cours est annulé demain".

Paradoxalement, la contrainte de brièveté intensifie le besoin d'expressivité chez les étudiants. Face à la réduction de l'espace textuel, ils développent des stratégies de compensation émotionnelle pour préserver la dimension affective de leur communication et développent des modes d'expression multimodales afin de pallier l'absence de gestuelle et d'intonation. Les *emojis* constituent l'outil privilégié de cette compensation (96% des étudiants y ayant recours quotidiennement pour apporter une clarification du ton émotionnel). En effet, les réseaux sociaux, et notamment Facebook, ont joué un rôle majeur dans la démocratisation des emojis, qui sont aujourd'hui essentiels aux échanges numériques. Un simple cœur rouge ❤️, un sourire 😀ou un animal stylisé par un emoji 🐼, suffisent désormais à transmettre des émotions que les mots seuls peinent parfois à communiquer. *« Le « E » signifie image (絵), et « moji » signifie caractère (文字). Originaire du Japon, les emojis donnent vie aux conversations à travers des expressions faciales, des gestes et des objets »* (Berger, 2025). Ils permettent de condenser des états émotionnels complexes en signes visuels immédiatement décodables. Un simple 😁peut exprimer l'amusement, l'ironie ou la complicité selon le contexte. Cette iconographie émotionnelle enrichit considérablement le potentiel expressif des messages courts.

S'ajoutent à cela les répétitions graphiques, comme la multiplication de lettres dans certains mots "cooool", "ouiiiiii", "nonnnn" ; "siiiiiiii" ; "troooop bien", qui servent à intensifier l'expression. La *ponctuation expressive* usant de signes non conventionnels comme la multiplication des points d'exclamation « !!!!!!!!! », d'interrogation « ??????? » ou l'usage des points de suspension (...), permettent de moduler l'intensité émotionnelle des énoncés. Cette intensité graphique permet de recréer une certaine proximité communicationnelle, en dépit de la distance imposée par l'écrit.

L'analyse révèle une créativité linguistique adaptative chez les étudiants, qui ne se limite pas à une simple réponse aux contraintes techniques, mais s'inscrit dans une dynamique innovante et identitaire. Elle se manifeste d'abord dans la concision. Les restrictions de longueur imposées sur les réseaux sociaux, et en particulier sur Facebook, ont favorisé cette innovation langagière. Pour contourner ces contraintes, les étudiants ont mis au point diverses formes contractées et acronymes afin d'optimiser leur communication (cette économie scripturale génère 73% des innovations observées dans le corpus). Par ailleurs, elle se traduit par l'invention de néologismes contextuels, des termes créés pour répondre aux exigences immédiates des situations de communication numérique.

De plus, le métissage linguistique, à travers l'alternance codique entre le français, l'arabe et l'anglais, s'impose comme une stratégie permettant d'ajuster le discours aux interlocuteurs et aux contextes. Enfin, les jeux graphophonétiques, tels que l'utilisation d'écritures phonétiques intentionnelles (« kel » pour « quel », « mwa » pour « moi »), reflètent une volonté de simplifier et de personnaliser l'expression écrite. L'ensemble de ces pratiques ne vise pas uniquement l'efficacité communicationnelle ; il participe aussi à l'affirmation d'une identité linguistique propre à la jeune génération étudiante, marquant ainsi leur appartenance à une communauté aux codes spécifiques.

Tout compte fait, on peut dire que l'étude révèle une dynamique complexe dans la manière dont les étudiants communiquent sur Facebook. Ils naviguent constamment entre trois pôles et sont en permanence obligés de composer avec plusieurs dimensions indissociables. D'un côté, ils se confrontent aux contraintes techniques propres à la plateforme, telles que la limitation du nombre de caractères, la structure des interfaces ou la présence / absence de certaines fonctionnalités, ce qui restreint la liberté d'expression et oblige à réguler la forme des messages. Parallèlement, ces étudiants cherchent à satisfaire des besoins expressifs personnels : ils veulent transmettre leurs émotions, nuancer leurs propos ou encore affirmer leur identité, ce qui les pousse à trouver des moyens originaux de contourner les limites imposées, afin que le message reste fidèle à leur intention. C'est précisément dans cet espace de tension que naissent des innovations créatives : pour surmonter les obstacles techniques tout en exprimant leur individualité, les étudiants inventent des néologismes, détournent le sens de certains mots, jouent avec le langage et construisent de nouveaux codes d'écriture. De cette manière, l'alternance constante entre contraintes, besoins expressifs et créativité linguistique façonne des modes de communication originaux et contribue à élaborer des pratiques communicatives particulières, caractéristiques de la communauté étudiante.

Conclusion

La communication étudiante en français sur Facebook se caractérise par une dynamique d'influence réciproque entre brièveté, expressivité et créativité linguistique. Les contraintes de rapidité et d'espace favorisent le recours à l'abréviation et aux messages courts, ce qui impose une certaine brièveté dans les échanges. Cependant, les étudiants cherchent aussi à exprimer leurs émotions, leurs intentions et leur personnalité, ce qui stimule l'inventivité dans le choix des mots, l'usage d'émoticônes, ou la création de tournures originales. Cette dynamique constante entre l'efficacité de la communication et le besoin de se démarquer conduit à l'émergence de formes langagières hybrides et innovantes, où chaque dimension influence et transforme les autres, enrichissant ainsi l'expression écrite sur le réseau social.

L'analyse de la communication étudiante en français sur Facebook révèle un phénomène linguistique complexe où contraintes techniques, besoins expressifs et créativité communicationnelle s'articulent de manière dialectique. La brièveté, initialement perçue comme une contrainte, stimule l'innovation linguistique plutôt qu'elle ne l'entrave. Les étudiants développent un "squelette consonantique" en supprimant systématiquement toutes les voyelles (slt, bjr, tkt, nvl, mrc) donnant ainsi lieu à la naissance de nouvelles formes expressives. L'expressivité trouve de nouveaux canaux de manifestation qui compensent les contraintes du medium. La créativité linguistique émerge comme une réponse adaptative aux défis de la communication numérique. Loin de représenter une détérioration de la langue française, ces pratiques témoignent au contraire d'une vitalité linguistique manifeste ainsi que d'une capacité affirmée à s'adapter aux nouveaux environnements communicationnels.

À la lumière de l'analyse des pratiques communicationnelles étudiantes sur Facebook, marquées par une dynamique d'interaction entre brièveté, expressivité et créativité linguistique, nous pouvons conclure que les résultats obtenus s'inscrivent pleinement dans la continuité des hypothèses formulées en amont de l'étude, et confirment de manière claire et cohérente ces dernières. Par ailleurs, la cohérence des résultats avec les hypothèses renforce la solidité méthodologique de la recherche, et offre une base fiable pour des investigations futures visant à approfondir la compréhension des phénomènes en question. Par exemple, il serait pertinent de se demander *dans quelle mesure ces pratiques communicationnelles sur Facebook influencent-elles les compétences rédactionnelles des étudiants dans un contexte académique ?* Cette perspective de recherche future pourrait contribuer à la compréhension des effets que ces formes hybrides et innovantes d'expression écrite, nées des contraintes et opportunités du numérique, ont sur l'évolution des compétences rédactionnelles des étudiants dans un contexte formel. Une telle étude permettrait de mieux saisir les interactions entre communication informelle et exigences académiques, contribuant ainsi à envisager des pratiques pédagogiques intégrant ces nouvelles réalités langagières.

Références bibliographiques

1. Balagué. C & Fayon. D, (2010), *Facebook, Twitter et les autres...*, Pearson Education, France.

2. Barbe, L & Delcroix, E. (2008), *Emergence et appropriation des dispositifs sociotechniques*, *Sciences de la Société*, Presses universitaires du Mirail,
3. Berger, M. (2025), *Smileys et émojis humains et leur signification*, in https://www.significationsmileys.fr/liste-smileys-humains-whatsapp
4. Cardon, D. (2010), *La démocratie Internet : promesses et limites*, Paris, Seuil.
5. Cavazza, F. (2016), *Panorama des médias sociaux 2016,* in https://fredcavazza.net/2016/04/21/panorama-des-medias-sociaux-2016/
6. Jenkins, H. (2013), *La culture de la convergence. Des médias au transmédia,* trad. de l'anglais par C. Jaquet, Paris, A. Colin.
7. Raffestin, A-L. (2011), *Facebook, est-il utile pour les étudiants ?* in
8. https://www.blogdumoderateur.com/facebook-est-il-utile-pour-les-etudiants/
9. Rissoan, R. (2012), *Réseaux sociaux - Comprendre et maîtriser ces nouveaux outils de communication*, Editions ENI, Paris, France.

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Commitment of the intervenant to the safety of the consumer against biologically treated products

Naziha Boudjerada
Research Scholar
University Amar Telidji
Algeria
Email: nnada1603@gmail.com

Bouhouia Amel
Research Scholar
Blida 2, Lounici Ali University, Law and Real Estate Laboratory
Algérie
E-mail: a.bouhouia@univ-blida2.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Intervenant; commitment to safety; biologically processed product; biological damage.

Abstract
There are many applications resulting from scientific and technological progress in the field of industries and services, especially biologically processed and genetically modified products, so that these applications affect the life of the person who is considered the final consumer of these products. As these products are biologically treated they cause harm to the consumer in his environment and his skin directly, especially as these damages accumulate and appear only after a long period of acquisition and use of the product, making it difficult to treat their effects. So that it has become mandatory obligation to comply with the safety of consumers against the damage of products treated biologically.

Citation. Naziha B., Bouhouia A. (2025). The Commitment of the intervenant to the safety of the consumer against biologically treated products. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 661–673. https://doi.org/10.56352/sei/8.11.52

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 27.01.2025 | Accepted: 17.07.2025 | Published: 19.08.2025 (available online)

Introduction:

Free market theories has always dominated the course of the global economy, and the accompanying passion of merchants for competition and its challenges, due to their excessive reliance on chemical, organic and biological compounds in many of their products, in order to raise production rates as quickly as possible, and at the lowest prices, even if that Causes harm to consumer safety. In addition to the information technology revolution witnessed by various industries, which prompted merchants and manufacturers to make use of its various data, especially genetic engineering, which played a major role in creating many genetic modifications in plants, fish and animals, on which many food industries are based, in order to raise the level of production, but unfortunately it carries with it many serious repercussions on the health of the consumer, and the matter becomes more complicated when it comes to medicines, medical and pharmaceutical preparations, and cosmetics , Because

of its strong impact on its preservation and suitability for use, and because of its risks that directly threaten the security and safety of the consumer, and because the manufacturer often uses chemicals in the manufacture of many of these preparations.

On the other hand, it has been discovered that many electronic devices play a serious role in threatening consumer safety, because they are made of toxic materials, which greatly harms not only the people living near the factories that produce these devices because they rely in their manufacture on lead and chromium, which is known to have a toxic effect, as well as copper and Others, but even users of these products. what has increased the seriousness of the matter is that many industries have recently resorted to relying on nuclear energy as a source of energy, not caring about the danger of radioactive leaks that contaminate products and goods and consequently lead to a disruption of the natural balance within the tissues and cells of the consumer.

All of this is a result of the liberalization of international trade due to economic globalization revealed the inability of many national legislations to protect some of their gains, especially in the field of consumer protection. This is what led to the call to unify legal rules in the field of consumer protection at the international level to ensure equal treatment between merchants in different countries. This idea has gained great importance, especially in the field of consumer protection from harm from biologically treated products, as most goods and services are not commonly traded on an international scale, then Unifying the rules in this field must be done by setting a minimum level of controls that must be observed in this field, provided that the details are left to the rule of national legislation, and this is the approach followed by the European Union in this regard.

Hence, we see the inevitability of preserving the health safety of the consumer of biological products, especially in the face of the biologically harmful activities of merchants and manufacturers, after it was proven that the Arab legal systems - including the Algerian legal system - are devoid of legislation sufficient to protect the consumer in this field, especially after the percentage of the incidence of cancer in its various forms in our society, which has recently recorded unusual rates, which forces us to consider the importance of organizing a commitment to consumer safety of biologically treated products.

Therefore, the research problem revolves around the absence of a clear legislative vision for the interventionist's commitment to consumer safety of biologically treated products, which has caused this situation to raise several questions, the most important of which are:

What is the content of the intervener's commitment to consumer safety of biologically treated products?

Our research will address this through two sections. The first relates to the basis of the interventionist's commitment to the consumer's safety from the biologically treated product, and the second section relates to the controls of the interventionist's commitment to the consumer's safety from the biologically treated product.

Chapter one: The basis of the interventionist's commitment to consumer safety from the biologically treated product

Biologically treated products are newly created products resulting from scientific and technological applications progress in the field of various industries, which prompted professionals and stakeholders to make use of technological revolution, especially genetic engineering, with the aim of raising the level of production due to the advantages offered by these biologically treated products in terms of abundant production and low costs to fulfilling consumers' desires. But on the other hand, these biologically treated products cause environmental damage that is difficult to remedy, in addition to their health damage that affects humans. The most dangerous thing is that these damages accumulate and do not appear until a period of time after their use. Hence, the recent damage resulting from biologically treated products has led to raising the problem of the basis of the intervenor's obligation to protect the consumer against this harm, and whether this obligation comes from the law or the contract.

Hence, we need to define the effect of the biologically treated product and explain its applications in commercial transactions, then address the source of the interventionist's commitment to the consumer's safety from the biological product.

The first requirement: The nature of the effect of the biological product and its applications in commercial transactions.

We will discuss the definition of the harmfulness of a biological product; highlight its characteristics, its reflection on the legal relationship between the intervener and the consumer, and its most important applications in commercial transactions.

The first section: Definition of the damage of the biological product and its characteristics:

1/ The concept of the damage of biologically treated products:

The effects resulting from biologically treated products are multiple and take a variety of forms, so we must search for the concept of this type of legally considered damage and determine its characteristics. However, what we noticed through our research is the lack of definitions that have been subjected to this damage, and this is due to the recent spread of damage to biological products. There are few legal studies that have dealt with regulating the responsibility for exposure to this damage in the relationship between the intervener and the consumer.

One of the most important definitions that address this damage is the text of Article 27 of the Biosafety Protocol as: "harm resulting from transboundary movements of living modified organisms," as defined by the US Environmental Protection Act CERCLA as: "damage that leads to the destruction of a natural resource."

What is noticed from these definitions is that they consider the damage resulting from biologically treated products to be a form of defect that afflicts the system of utilizing natural environmental resources, but they neglected that this damage has now affected humans as the final consumer of these goods and services, and therefore a distinction must be made between the biological damage that is caused To the environment in one of its elements, and the damage directly caused to humans, causing a defect in their vital functions.

Some commentators of civil law also went on to drop the general theory of damage on biological damage, considering that material damage is a violation of the interest of the effected person of financial value or harm or diminution of a right or material interest, and since the damage results in an infringement on human rights and capabilities, so that infringement causes an organic defect that results in the loss of those components or their complete loss, and may lead to harm the affected person's professional abilities. Hence, the material damage can be a serious harm to a person's health as a result of his eating food made from biologically processed or genetically modified products, which may cause allergies. Or taking the patient as a consumer of molecular therapy using genetic engineering may lead to transforming diseased cells into cancerous cells or disabling one of the genes that perform essential work for the human body.

It may also be included within the scope of the concept of damage resulting from a biological product, the moral damage resulting from a person eating genetically modified food, which leads to his contracting organic diseases and morphological deformities. Here, the harmful act may result in a moral damage.

2/The characteristics of the biologically treated product damage:

Biological damage is characterized by special features that distinguish it from other damages affecting the consumer, which have legal repercussions, which are as follows:

- **Difficulty in monitoring damage in biologically treated products:** Since biological damage is of a hidden nature, it is difficult for the consumer to notice and detect it when he eats the product or receives the service. This is due to the fact that biological materials are microscopic bacteria, viruses, or radiation that is difficult to see with the naked eye, It cannot be perceived by smell or touch, even if this product causes harm to humans, it is difficult to prove it if the consumer wants to impose responsibility on the intruder for the harm he has encountered.

- **The slow effects of damage from a biologically treated product:** The effects of biological damage may not appear immediately on the consumer, and this damage can also be transmitted to his heirs after him, and this is what makes the effect of this type of damage not limited to the present only, but may extend to future generations.
  As confirmed by the Carthage Protocol on Biosafety, the effects of biological damage cannot be observed except after long periods of time after eating the commodity or using the biologically treated product. This was explicitly confirmed by the French Court of Orleans in the "Monsanto Company" case when it held that biological damage would leave negative effects on biodiversity, the size and nature of which would be difficult to determine except over the coming years.
  On the one hand, this characteristic has raised several problems, regarding the extent to which the supplier's responsibility ends after the good or product crosses the borders of the country to which it is supplied, and on the other hand, the difficulty of proving the causal relationship between the intervening error and the damage that occurred, due to the passage of a long period of time between the occurrence of the accident and its discovery
- **Difficulty in determining who is responsible for the damage to a biologically treated product:** Biological damage is characterized by the difficulty of determining its source, and this is due to the multiplicity of those involved in the production of the commodity, as the products pass through several stages and through many people (producer - importer - distributor - wholesaler - retailer) until they reach the consumer, and this leads to difficulty identifying the person responsible, and thus raises several problems, the most important of which is the difficulty of proving this damage and the difficulty of identifying who is responsible.

The second section: Applications of the biologically treated product to commercial transactions:

Biotechnologies that are used in various industries are considered to be various types of cells and organisms (bacteria, viruses, fungi...), or complexly combined radioactive materials, which affect the consumer's health in general. But not all of these biotechnologies can be used industrially or have application in commercial transactions, and from here we will shed light on the most important technologies used in these fields:

1/ Genetically modified organisms (GMO): What has been observed recently is the increase in the process of introducing organisms with a specific genetic content to produce goods with improved characteristics in a new way. This method has received the lion's share in many industries, especially in the production of agricultural crops, seeds, and agricultural and food products.

2/ Mutations: They are a sudden and continuous change that occurs in the genetic makeup of an organism, leading to the emergence of a new, different generation.

3/ Tissue culture: It is the cultivation of any plant part in an environment that is artificially fed, sterile and free of pollution.

4/ Biotechnologies: They are methods of using living organisms in order to modify the manufacture of some goods to improve their quality or to produce goods bearing desirable characteristics, or vice versa, through genetic engineering.

5/ **Biological compounds:** These are the compounds that are usually used as preservatives, including:

ATIC compound: It is considered a food preservative, and it has been shown that it is abundant in common foods. It has been proven that this compound is considered a carcinogenic and toxic substance and causes a defect in the DNA strand, and inhaling it may cause cancerous tumors in the lung.

Olestra compound: It is a manufactured food additive consisting of sugar and fat. It was approved by the Food and Drug Administration in USA in 1996 as a food additive for use in snacks such as cornflakes. However, this compound should not be overused, and foods that contain this compound must carry adequate warnings indicating its negative effects, such as diarrhea, intestinal cramps, and withdrawal of vitamins from the body.

Mycoprotein compound (Quorn): It is a type of fungus that is used in the manufacture of protein-free meat. Although this compound is placed on the list of safe food compounds, it has been proven that its excessive use causes diarrhea, vomiting, and skin rashes, and may lead to death.

RF/MW radiation: It is considered one of the most common causes that lead to the consumer suffering from biological damage when exposed to this radiation, as a result of eating some foods or using some substances (preparations - medicine -...) due to the possibility of malfunctioning the functions of devices inside the body and causing cancer.

The second requirement: The source of the intervener's commitment to safety against the biologically treated product:

In Law 03/09 relating to consumer protection and suppression of fraud, the Algerian legislator mentioned that the rules of this law apply in the field of consumer protection, and to every good or service offered for consumption in return or for free and to every intervener in all stages of the process of offering for consumption. Through this law, the Algerian legislator, in its Article 3, Paragraph 06, defined product safety as: "The complete absence or presence, at acceptable levels and without danger, in a food substance of contaminants, adulterated substances, natural toxins, or any other substance that can make the product harmful to health in an acute or chronic manner." Then added in paragraph 11 of the same article that: "A sound, fair, and marketable product: a product free from any deficiency and/or hidden defect that guarantees no harm to the health and safety of the consumer and/or his material or moral interests."

We perceive from this text that the Algerian legislator recognized the application of the rules of this text in the field of consumer protection, and to every intervener in all stages of the process of producing and displaying goods for consumption, and thus expanded consumer protection, especially by defining the safety of products and those that are marketable by being free of any defect; Which may lead to it compromising the safety and health of the consumer, causing him material or moral harm. Therefore, we conclude from the text that the basis of the intervener's commitment to the consumer's safety is the law. It then follows that the contract between the intervener and the consumer stipulates this obligation or not, and this matter was confirmed when Article 19 stipulates in paragraphs 2 and 3 of Law 18/09 amending and supplementing Law 09/03 that: "withdrawal is the consumer's right to withdraw from the purchase of a product without just cause. The consumer has the right to refrain from purchasing a product within respect of the terms of the contract."

However, this law did not specify what is meant by a product that is safe and safe for the health of the consumer, and did not regulate the specifications that must be met to ensure that the biologically treated product is

free from biological harms, which may be understood as saying that the scope of the intervener's commitment to safety stops at the limits of traditional harms, Especially if the intervener maintains that the biological damage is not classified as among the conventional damages, whether in terms of the methods of its detection or in terms of the size and type of damages resulting from it, and therefore it is difficult here to say that the basis of the intervener's commitment to the safety of the consumer of the biologically treated product is the law**. Can we consider the basis of this obligation to be the contract?** However, in practice, this is difficult because the party involved does not accept the commitment to safety against biological damage under the contract because he always seeks to evade obligations that would burden him towards the consumer.

At the international level, European directives have imposed many obligations that the intervener must take into account in general regarding the safety of goods and products offered for consumption, foremost of which is what was stated in Article 1, Paragraph 3 of European Directive No.: 2001/95/EC that The producer is committed to putting only safe products on the market, and Paragraph 2 of it was keen to specify when a product is considered safe, which is if it meets the specifications and standards stipulated in Article 4 of the same directive. If they are not sufficient, then what matters is what is stated in the national law of the country in which the product is marketed.

What is noted from the texts of the European directive is that it addressed the intervener's commitment to safety in general, without addressing biological damage with a specific provision. This indicates a deficiency in these directives, as evidenced by the damage to which consumers in some European countries were exposed, In 2004, a safety test was conducted on 98 products offered in European markets (such as children's toys, lighters, laser pointers, involuntary reflectors, candles, etc.), and it was found that 25 of them contained biological harmful substances, and that 27 of them were susceptible to becoming a defective product.

The thing that increases the seriousness of the matter is pharmaceutical products, especially since the institutions responsible for producing a defective drug evade responsibility by claiming that there is no legal text obligating them to be safe against biological damage, and that they are not linked to the consumer (patient) by any direct contractual relationship, This often exposes the injured party to not meeting the conditions of the compensation claim. However, the French judiciary was keen to confront these challenges by establishing the principle of "safety precaution" in accordance with Article 1135 of the Napoleonic Code, which stipulates that contractual obligations are not interpreted in light of the letter of the texts or clauses of the contract, Rather, it is interpreted according to the implicit will of the contracting parties and what is required for proper implementation of the contract in light of prevailing customs. The Court of Cassation ruled in application of this in its ruling issued in 1998 that drug producers must ensure that they are free of defects that pose a danger to people or property. It is clear from this ruling that it is intended to establish a supposed legal obligation, obligating the intervener to take into account the consumer's safety against biological damage, regardless of the existence of a contractual relationship between him and the consumer.

In response to the above, it seems clear that the basis of the intervener's commitment to the safety of the consumer against the biologically treated product must be the law and not the contract, because there is no room in consumption contracts in particular to leave such an obligation to the will of the parties Because the intervener quickly repudiates and forces the consumer to accept the contract free of this obligation, and on the other hand, there are multiple interveners who contribute to the product reaching the hands of the final consumer, making it difficult to say that there is a direct contractual relationship between the consumer and them ,Therefore, it is difficult to rely on the contract to cover this obligation. In addition to the seriousness of biological damage, the general texts regulating the consumer safety obligation are not sufficient, and therefore we need special texts that address the precise details of this obligation.

Chapter two: Controls for the Interventionist's Commitment to Ensure Consumer Safety from the Biologically Treated Product

Since the obligation to be safe is the debtor's pledge to implement his obligation without harming the creditor, and in order to establish this obligation two conditions must be met. The first is that the relationship involves a danger that threatens one of the parties - and this is the justification for the existence of the obligation to be safe. The second - that the debtor of the obligation must be a professional - and this is what this obligation requires, that it requires from the debtor more care and diligence, and that he has high experience that enables him to exercise care and diligence that exceeds the care and diligence of the average person, Also, the term Biosafety refers to the procedures adopted to ensure the safe use of biotechnology applications, and the biological safety controls to protect the health and safety of the consumer, which requires the intervener to use food and environmental standards to ensure consumer safety, This is what we seek to achieve by presenting the most important controls for the interventionist's commitment to consumer safety of the biologically treated product.

From here, we will first address the interventionist's obligation to provide a biologically safe product, and then we will address the interventionist's obligation to inform the consumer of the nature of the effects resulting from biological materials.

The first requirement: The interventionist's commitment to provide a biologically safe product:

Biologically treated products are classified as inherently dangerous products, because the danger is inherent in them, and thus they differ from defective products to which the danger is inherent. Hence, we must separate between the safe product, even though it contains biological materials, and the biologically harmful product, Hence, we must first address the measures that the intervener must take into account in order to provide a sound biologically treated product, and the amount of care that the intervener must exercise in this aspect.

Section One: Measures that the intervener must take into account in order to provide a sound product:

The most important measures to ensure the provision of a safe biologically treated product are:

1/Ensuring the availability of standards that prove that the product is free from biological harm: These standards must be regulated by internal laws, and should not be left to contractual negotiations between the intervener and the consumer due to the possibility of the first party repudiating them.

The Algerian legislator stipulated in Article 4 of Law 09/03 relating to consumer protection and suppression of fraud that every intervener, when placing food for consumption, must respect the obligation of the safety of these materials, and ensure that they do not harm the health of the consumer. The concept of microorganisms (viruses, bacteria, yeasts, fungi...) was specified in Executive Decree 15/172, which specifies the conditions and methods applied in the field of microbiological characteristics of nutrients.

The concept of microorganisms (viruses, bacteria, yeasts, fungi...) was specified in Executive Decree 15/172 specifying the conditions and methods applied in the field of microbiological characteristics of nutrients. Then define the microbiological characteristics in Article 3, Paragraph 2, of the aforementioned Executive Decree and consider them to be the criteria to be applied to nutrients in order to ensure respect for the hygiene and safety of nutrients during their placement for consumption. and added in Paragraph 3 of the same article that microbiological standards are the standards that determine the extent of acceptability of a product, a portion of its nutrients, or a method on the basis of the absence or presence of microorganisms or the quantity of their toxins..., and consider The security standards for nutrients in Paragraph 4 of the same article to be the standards that determine the extent of acceptability of a product or share of nutrients applied to materials offered for sale. As stated in the text of Article 08 of Executive Decree 15/172 mentioned above, "The party involved in the process of placing nutrients for consumption must ensure respect for microbiological standards..."

The legislator added that these standards will be determined according to a decision of the ministers in charge of consumer protection and the suppression of fraud, agriculture, health... We note that the Algerian

legislator tried to give an understanding of the standards that determine the extent of the health and safety of the product offered to the consumer in order to prevent the emergence of any microbiological risk, and the scope of determining these standards is left to the ministers in charge of consumer protection, each according to his specialty and field.

At the international level, there are no unified standards regulating the rules for assessing the risks of biologically treated products or genetically modified organisms, despite cooperation between many international bodies to classify substances and compounds that affect consumer health and safety, such as the World Health Organization (WHO), the Food and Agriculture Organization (FAO), and the Carthage Protocol on Biosafety ,these systems did not set standards for evaluating biological harm, and instead defined a safe product in general, without specifying a distinct definition for a biologically safe product. Because according to the text of Article 6 of European Directive No. (1985/374/EC): A product is considered safe if it does not cause harm to the consumer according to his expectations: taking various circumstances into account, such as the way it is presented, its use in the expected manner, and the time in which it was put into circulation.

It is clear from the above that sufficient criteria have not been specifically determined to be considered biologically safe, because it is difficult to detect a biologically harmful product from the way it is presented or packaged, Given that biological organisms and compounds are impossible for the consumer to perceive with his normal senses, because these compounds and organisms are heavily involved in the composition of the product and improving its quality, shape and texture in a way that attracts the consumer to use it, in addition to the fact that the biologically treated product does not show its effects until after continuous use of the product or service.

2/ Comparing the advantages and disadvantages of using biological material in the product: Note that many industries rely heavily on biological materials, and therefore the goods containing a biological material or component is not considered harm in itself, However, the interventionist must compare the benefits and disadvantages of this biological substance from an economic and social perspective, and the seriousness of the potential risks of its use. For example, some medications that contain biological compounds are necessary to treat a serious disease such as cancer, but at the same time they have a side effect in other matters such as hair loss.

3/ We do not rely on the consumer's personal ability to evaluate the safety of the product: the interventionist must not rely in evaluating the biologically treated product on the consumer who owns that product, even if data regarding the components of the product are written and shown on its packaging (label),Because most consumers do not have the culture of paying attention to the label and reading the components of the product, and even if they did, the consumer often does not have the ability to understand the nature of these compounds or their effect, and therefore the intervener must take samples of the product and conduct laboratory tests on it Before offering it to the consumer, this is what was stipulated in Article 09 of Executive Decree 15/172 mentioned above, taking into account the methods of risk assessment by the competent international organizations according to Article 10 of the same decree.

Section two: The standard of care that the intervener must exercise to provide a biologically treated product that does not harm the consumer:

There are two standards to measure the care that an interventionist must exercise when he is in the process of implementing the standards required of him to provide a biologically treated product free from biological harm, which are the personal standard and the objective standard.

1/ Personal standard: According to this standard, in order for the intervention issued by an action to be considered a violation of taking the necessary standards to provide a biologically safe product, the person must personally know that he has performed an action or refrained from an action that entails a violation, and that practicing this action would harm the consumer. It is noted that adopting this personal criterion would narrow the scope of cases in which the merchant's behavior would be considered a mistake or a violation of the implementation of his

obligations, due to the difficulty of proving the presence of this knowledge on the part of the intervener, considering that the subject of proof is an intangible psychological issue.

2/ Objective standard: This standard is based on measuring the intervener's knowledge of the possibility of biological harm occurring when the consumer acquires the biologically treated product, in light of a fixed standard previously defined, which is the standard of the careful man or the careful intervener in the same circumstances and competence as the intervener, regardless of the interventionist's personal psychology. So, it is assumed that the intervener is aware of the possibility of biological damage occurring if the person is careful in the same circumstances and competence as him.

Many legislations, including Algerian legislation, in the process of defining a safe product, have sought to clarify the role of consumer expectations as one of the measures that must be taken into account when assessing the interventionist's commitment to safety. So the legislator stipulated in the text of Article 09 of Law 09/03 related to consumer protection and suppression of fraud that products intended for consumption must be guaranteed and have security in view of the legitimate use expected of them. With that it does not cause harm to the health, security or interests of the consumer, within the normal conditions of use..., and he added in Article 10 of the same law that every intervener must respect the obligation of the security of the product that he puts for consumption with regard to:

- Its features, composition, packaging, and conditions for assembly and maintenance - The effect of the product on other products when it is expected to be used with these products - The presentation of the product, its labeling, and possible instructions for its use and destruction, as well as all instructions or information issued by the product - Categories of consumers who are exposed to serious danger as a result of using the product, especially children.

At the level of judicial definitions, the French Court of Cassation defined a safe product as: "a product free of defects that pose a danger to people, according to the degree of care and care expected from the intervener."

In this regard, the French Court of Cassation adopted an expanded interpretation, which would open the horizon for the consumer to expect whatever he wants regarding the interventionist's commitment to safety, as it explicitly decided that: The product must provide the safety that is expected to be provided by it. However, for our part, we do not agree with this ruling, since it gives free rein to evaluating the consumer's expectations in his personal assessment of the safety of the product, but it is preferable for the evaluation to be made according to the objective standard, which is the standard of the average consumer or what the general public expects.

The second requirement: The legal nature of the intervener's obligation to inform the consumer:

There have been conflicting opinions about the legal nature of the intervener's obligation to inform the consumer. There is a judicial side that believes that this obligation is an obligation to achieve a result and not an obligation to exercise care. This is because the intervening producer cannot adhere to the dangers of the sold commodity (especially biologically treated products, as they contain dangerous biological and chemical materials and compounds).

As for another aspect of the law's explanations, it believes that this obligation is an obligation to exercise care, because the intervener does not control the outcome of the advice he provides to consumers; nor oblige them to follow it, as this obligation is achieved by the intervener making the appropriate effort to inform the consumer. The obligation to exercise diligence as a standard for measuring the intervener's commitment to the media has witnessed great development, especially in recent times. It has become determined in light of the risks associated with the activity carried out by the obligor, which requires him to analyze the risks surrounding and expected in his activity, and then he must exercise care commensurate with the size of these risks, according to the standard of a professional in dealing with biologically treated products.

As for the Algerian legislator, the dispute was settled under Law 09/03 relating to consumer protection and the suppression of fraud, mentioned above and consider The intervening obligation to inform the media an obligation to achieve a result by arranging a criminal penalty in the event of a violation of this obligation imposed on the intervening parties, even if no harm results to the consumer as a result of his acquisition of the product. As for the event that the product causes harm to the consumer, here civil liability is determined in addition to criminal liability (see Article 78 of Law 09/03 relating to consumer protection and suppression of fraud).

Conclusion:

Through this research, we sought to highlight the concept of legal safety and security in protecting the safety and health of consumers from biologically treated products. Especially after the high rates of cancer throughout the world and in the Arab countries and Algeria in particular, and other diseases that are transmitted to the consumer through his consumption of biologically processed and genetically modified products. Especially after the stakeholders became heavily dependent on biological materials in the industry in order to increase production and improve its quality for greater competition, not caring about the diseases that could affect the consumer Who has become prey to the temptations of technology and dazzling advertisements without knowing the health implications of the products he consumes. Hence, we sought to develop a legal regulation that addresses the intervener's commitment to consumer safety against the harms of biologically treated and genetically modified products. Especially that Algerian law in general and the Consumer Protection Law in particular lack a clear legislative treatment for this type of obligation, and are satisfied with the general texts that regulate the commitment to safety in general. We have been keen to clarify the concept of harm caused by biologically treated products, out of our desire to understand its nature, legal characteristics and the most important industrial applications of biological compounds To demonstrate the importance of specifying the dimensions of the intervener's commitment to safety against biological harm, we were also keen to consider that the law is the source of this obligation because the consumption contract cannot be relied upon as a source of the intervener's commitment to consumer safety against biological harm. Hence, we concluded our research with a set of results, the most important of which are:

- The importance of legal protection for the consumer against harm from biologically treated products, despite the importance of benefiting from biotechnology data and the applications of genetic engineering in industrial fields.
- There is a clear deficiency in national legislation regarding regulating the intervener's responsibility for compensation for biological damages.
- The difficulty of proving harm in biologically treated products and the nature of its effects on the consumer.

This research also concluded a set of recommendations, the most important of which are:

- National legislation must adopt laws that achieve a balance between considerations of consumer protection against the risks of harm from biologically treated products, and considerations of enabling the intruder to benefit from biotechnology data, to help him compete nationally and internationally.
- Legal legislators must formulate clear legal texts obligating the intervenant to protect the consumer against harm caused by biologically treated products, and not leave this to the agreement between the intervenant and the consumer in the consumption contract.
- Legal texts must be put in place that specify the specifications of the biologically safe product, and some kind of control must be exercised over the activity of those involved in observing these specifications, whether when manufacturing the product or trading it in the market.
- Liability for damage resulting from a biologically treated product must be attributed to the intervening party, the producer and manufacturer of the commodity; unless an intruding cause is proven.

List of References:

I/ Arabic References:

1- Ayman Ibrahim Al-Ashmawy: The development of the concept of error as a basis for civil liability, Dar Al-Nahda Al-Arabiya, Cairo, 1998.
2- Ahmed Khadiji: Consumer protection through commitment to religious information, Journal of Policy and Law Notebooks, No. 11, Ouargla University, 2014.
3- Hamdi Eid al-Rahman: The Mediator in the General Theory of Obligations, Book One, Dar al-Nahda, 1999.
4- Samir Hamid Al-Jamal: Civil Liability for Biological Damage, Sharia and Law Journal, United Arab Emirates University, Issue 42, April 2010.
5- Saeed Saad Abdel Salam: Commitment to Disclosure in Contracts, Dar Al-Nahda Al-Arabiya, 1st Edition, 2000.
6- Alaa Al-Tamimi Abdo: The merchant's commitment to ensuring consumer safety in the era of international trade liberalization, Dar Al-Nahda Al-Arabiya, Egypt, 2017.
7- Abdul Razzaq Al-Sanhouri: The Mediator in Explanation of Civil Law - The Theory of Commitment in General, Sources of Commitment, Volume Two, Harmful Action, Third Edition, Dar Al-Nahda, 1981.
8- Abdullah Mabrouk Al-Najjar: Damage and the extent of its liability in Islamic jurisprudence and law, a comparative study, Dar Al-Nahda, first edition, 1990.
9- Essam Ahmed Al-Bahji: Compensation for damages resulting from genetic engineering applications in light of the rules of civil liability, New University Publishing House, 2006, Alexandria, Egypt.
10- Muhammad Boudali: Consumer protection in comparative law (a comparative study with French law), Dar Al-Kitab Al-Hadith, Algeria 2006.
11- Mohamed Hossam Mahmoud Lotfy: Information Services Contracts, Cairo, 1994.
12- Nabila Ismail Raslan: Responsibility in the field of informatics and networks, New University House, 2007.
13- Zahia Houria Si Youssef: Study of Law No. 09/03 of 02/25/2009 relating to the protection of the Algerian consumer, Dar Houma for Printing, Publishing and Distribution, Algeria, 2017.

III/ Foreign Languages References:

1- Cassation civil 21 November 1979, JCP 1979.
2- Marie-Eve Arbour, Compensation for damage caused by defective drugs: European private law between safety requirement and free-market value, op,cit, page 90.
3- Sylvie Bony: Biotechnologies, a security source for the future?, French research papers, vol. 7, no. 6 November 1998.
4- National Research Concil, Oil in the sea: Inputs, Fats, and Effects (1985).
5- Office of the secretary, Interior, 43 CFR Subtile A (10-1-11 edition).

IV/ Laws and Decrees:

1- Law 18/09 amending and supplementing Law 09/03 relating to consumer protection and suppression of fraud, dated 06/10/2018, Official Gazette No. 35, dated 06/13/2018.
2- Law 09/03 relating to consumer protection and suppression of fraud, dated 02/25/2009, Official Gazette No. 15 dated 03/08/2009.
3- Executive Decree No. 15/172 specifying the conditions and procedures for application in the field of microbiological characteristics of foodstuffs, dated June 25, 2015, Official Gazette No. 37 dated July 8, 2015.

4- Executive Decree No. 13/378 setting the terms and conditions related to consumer information, dated 11/09/2013, Official Gazette No. 58 dated 11/18/2013.

V/ Websites:

1- The Carthage Protocol on Biosafety of the Convention on Biological Diversity: available at this link
1. https://treaties.un.ogm/doc/source/recentTexts/27-8a-ar.doc
2- Liability and redress for damage resulting from transboundary movements of living modified organisms Convention on Biological Diversity, Carthage Protocol on Biosafety, Nairobi meeting, October 2001, available at:
2. https://www.cdb.int/doc/meetings/bs/iccp-02/official/iccp-02-03-ar.doc
3. 3-U.S. food and Drug Administration, Generally Recognized as Safe (GRAS), available at:

http://www.fda.gov/Food/IngredientsPackagingLabeling/GRAS/

Footnotes:

1-The Carthage Protocol on Biosafety of the Convention on Biological Diversity: available at the link https://treaties.un.ogm/doc/source/recentTexts/27-8a-ar.doc
2- Office of the secretary,Interior,43 CFR Subtile A (10-1-11 édition) page 220.
3- Alaa Al-Tamimi Abdo: The merchant's commitment to ensuring consumer safety in the era of international trade liberalization, Dar Al-Nahda Al-Arabiya, Egypt, 2017, p. 24.
4-Abdul Razzaq Al-Sanhouri: The Mediator in Explanation of Civil Law - The Theory of Commitment in General, Sources of Commitment, Volume Two, Harmful Action, Third Edition, Dar Al-Nahda, 1981, p. 1197.
5-Abdullah Mabrouk Al-Najjar: Damage and the extent of its liability in Islamic jurisprudence and law, a comparative study, Dar Al-Nahda, first edition, 1990, p. 14.
6-Essam Ahmed Al-Bahji: Compensation for damages resulting from genetic engineering applications in light of the rules of civil liability, New University Publishing House, 2006, Alexandria, Egypt, pp. 79-80.
7-Hamdi Eid al-Rahman: The Mediator in the General Theory of Obligations, Book One, Dar al-Nahda, 1999, p. 534.
8-Alaa Al-Tamimi Abdo, op. cit, pp. 25-26.
9-National Research Concil , Oil in the sea sea : Inputs,Fats ,and Effects (1985).
10- See: "Liability and Redress for Damage Resulting from Transboundary Movements of Living Modified Organisms Convention on Biological Diversity," Carthage Protocol on Biosafety, Nairobi Meeting, October 2001, available at the link :
https://www.cdb.int/doc/meetings/bs/iccp-02/official/iccp-02-03-ar.doc
11- Samir Hamid Al-Jamal: Civil Liability for Biological Damage, Sharia and Law Journal, United Arab Emirates University, No. 42, April 2010, p. 329.
12- Alaa Al-Tamimi Abdo, op. cit, p. 28.
13- Sylvie Bony: Biotechnologies, security source for the world?, French research papers, vol. 7, no. 6 november 1998. P 58.
14- Issam Ahmed Al-Bahji, op. cit, p. 23.
15-Alaa Al-Tamimi Abdo, op. cit, p. 29.
16- Alaa Al-Tamimi Abdo, op. cit, pp. 30-31.
17-Alaa Al-Tamimi Abdo, op. cit, p. 32.
18- U.S food and Drug Administration, Generally Recognized as Safe (GRAS), available at the link :
http://www.fda.gov/Food/IngredientsPackagingLabeling/GRAS/
19- Samir Hamid Al-Jamal, op. cit, p. 328.
20- Law 09/03 relating to consumer protection and suppression of fraud, dated 02/25/2009, Official Gazette No. 15 dated 03/08/2009, p. 13.
21 - Law 18/09 amending and supplementing Law 09/03 relating to consumer protection and suppression of fraud, dated 06/10/2018, Official Gazette No. 35, dated 06/13/2018, p. 6.
22- Alaa Al-Tamimi Abdo, op. cit, p. 36.
23- Alaa Al-Tamimi Abdo, op. cit, p. 37.
24- Alaa Al-Tamimi Abdo, op. cit, p. 39.

25-National Biosafety Structure in the Syrian Arab Republic, op. cit.
26-- Executive Decree No. 15/172 specifying the conditions and procedures for application in the field of microbiological characteristics of foodstuffs, dated June 25, 2015, Official Gazette No. 37 dated July 8, 2015, p. 15.
27-Alaa Al-Tamimi Abdo, op. cit, pp. 44-45.
28-Issam Ahmed Al-Bahji, op. cit, 36-37.
29-Alaa Al-Tamimi Abdo, op. cit, p. 50.
30-Alaa Al-Tamimi Abdo, op. cit, p. 55.
31-Ayman Ibrahim Al-Ashmawy: The development of the concept of error as a basis for civil liability, Dar Al-Nahda Al-Arabiya, Cairo, 1998, p. 5.
32-Alaa Al-Tamimi Abdo, op. cit, p. 56.
33-- Marie-Eve Arbour, Compensation for damage caused by defective drugs :European private law between safety requirement and free-market valus, op,cit , page 90.
34-- Alaa Al-Tamimi Abdo, op,cit , p. 62.
35-Zahia Houria Si Youssef: Study of Law No. 09/03 of 02/25/2009 relating to the protection of the Algerian consumer, Dar Houma for Printing, Publishing and Distribution, Algeria, 2017, p. 50.
36- Nabila Ismail Raslan: Responsibility in the field of informatics and networks, New University House, 2007, p. 16; Muhammad Hossam Mahmoud Lotfy: Information Services Contracts, Cairo, 1994, p. 90.
37- Alaa Al-Tamimi Abdo, op,cit , p. 65.
38-Executive Decree No. 13/378 specifying the terms and conditions related to consumer information, dated 11/09/2013, Official Gazette No. 58 dated 11/18/2013
39- Ahmed Khadiji: Consumer protection through commitment to religious media, Journal of Policy and Law Notebooks, No. 11, University of Ouargla 2014, p. 24.
40- Saeed Saad Abdel Salam: Commitment to Disclosure in Contracts, Dar Al-Nahda Al-Arabiya, Edition 1, 2000, p. 112.
41-Cassation civil 21 November 1979, JCP 1979.
42-Muhammad Boudali: Consumer protection in comparative law (a comparative study with French law), Dar Al-Kitab Al-Hadith, Algeria 2006, p. 75.
43-Alaa Al-Tamimi Abdo, op,cit , p. 70.

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Digitalization in Higher Education in Algeria: Trajectories and Outcomes

Ghania Bradai
Dr.
Assistant Professor at Akli Mohand Oulhadj University Bouira, laboratory
Algeria
Email: g.bradai@univ-bouira.dz

Sakhria Saidi
Dr.
Assistant Professor at Lounis Ali University Blida 2, laboratory
Algeria
E-mail: es.saidi@univ-blida2.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Digitization; Educational Platforms; Digital Applications; Higher Education Reform; Technological Integration; Digital Transformation.

Abstract
The university represents one of the social institutions with a profound impact on all other sectors within society. It has structural relationships with them and plays significant and highly impactful roles, making it a driving force for both social and economic development. It is a central actor and an active contributor to the advancement and prosperity of society. Furthermore, it is a vital cultural and intellectual hub, as it is closely linked to the societal context and to a key demographic—youth. The university also drives social dynamics, positioning it as a system that does not function in isolation from other social entities, but rather operates in an interconnected and interactive manner. Given the importance of its tasks, the university seeks to make the most of available resources and, even more, strives to innovate and create strategies that help it carry out its tasks effectively, contributing to the improvement of social life and making it more adaptable and practical. Among the bold steps taken in pursuit of this goal was the digitization of the sector in all its branches, structures, and devices. It launched dozens of electronic platforms and digital applications to manage the sector and improve the services it provides. The question driving this paper is: What are the requirements for the digitization of higher education, what challenges did the process face, and what were its impacts?

Citation. Bradai Gh., Saidi S. (2025). Digitalization in Higher Education in Algeria: Trajectories and Outcomes. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 674–682. https://doi.org/10.56352/sei/8.11.53

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 27.12.2024 | Accepted: 17.06.2025 | Published: 05.09.2025 (available online)

Introduction

For years, Algerian universities have been working on providing high-quality education and enhancing the outcomes of their programs. To achieve this, significant human and material resources have been allocated, alongside reforms followed by successive updates in line with both international and local transformations and developments across all levels—social, political, cultural, and technological. The latter has witnessed a massive revolution that directly impacted individuals, societies, and the world as a whole. This scientific technological revolution has affected all categories and fields.

Among the areas influenced by the technological revolution is education. On one hand, the technological revolution is the product of educational actions and the result of studies and research conducted by educational institutions, as well as the outcome of human minds that have worked within these institutions. Educational institutions have developed and refined it through their pedagogical discourses, various educational tools, methods, and approaches, aligned with scientific and technological orientations. In this context, scientific and technological training is both a goal of educational practices and an integral part of their philosophy. On the other hand, technological systems contribute to enhancing the educational process.

In its pursuit of achieving its objectives, the Algerian university has worked to keep pace with technological developments and utilize them in delivering educational content. This is clearly evident in the introduction of numerous disciplines, scientific branches, and even national schools that focus specifically on technological advancements, such as the National School of Artificial Intelligence. Additionally, efforts have been made to ensure that computer science is a core subject taught across all scientific, human, and social disciplines.

1. Concept of Digitization

The transformations experienced by societies, particularly democratic changes, have led to the addition of new tasks for educational systems. These tasks required the educational structures to expand in the range of services provided, ensuring that all service seekers are treated equally. As a result, one of the primary objectives of education has become the preparation and provision of conditions that allow every individual to access the level of education they are capable of reaching based on their abilities, readiness, and resources, through various means and for as long as possible. This necessitates working to provide equal educational opportunities for individuals who wish to pursue their education, regardless of age, geographic location, or social status. It also requires the society's ability to respond and adapt to new developments and challenges (Amer, E-Learning and E-Teaching, 2015, p. 24).

Education has become an essential and primary means for the advancement and progress of societies, particularly in the context of technological development, coinciding with the global economic shift towards a knowledge-based economy. In the face of the technological revolution, the advancement and development of communication, information, and educational media have played a significant role. The continuity of civilizations is now dependent on their response to changes and transformations across various fields. As a result, societies and countries have undergone transformations in their higher education systems, with the pace of change varying from one country to another (Ahmed, 2010, p. 09).

Modern technological tools have imposed themselves across all aspects of life, including education, by contributing to the emergence of new techniques, methods, and approaches that primarily rely on the use of modern technologies such as computers, satellites, even satellite television, and the internet. These tools aim to provide continuous education, regardless of time or location, and offer educational content in various forms—written, spoken, and visual—through diverse formats that make the learning process more enjoyable, efficient, and less time-consuming, with higher quality and less effort (Amer, E-Learning and Virtual Education: Contemporary Global Trends, 2015, pp. 19-20).

Before delving into the topic of digitization in education, it is important to address some related concepts, including technology. The earliest emergence of this term dates back to 1770 in Germany, where it referred to the systematic production of knowledge in the arts of industry or applied science. Hamelton defined it as "the means by which humans can expand their control over their surroundings." On the other hand, Ruby defines information technology as "all types of software, hardware, and equipment related to computing and communication, whether it be a personal computer, phone, or through management information systems." Digital technology refers to that branch of scientific or engineering knowledge that deals with the innovation and scientific use of digital systems, devices, and computers, along with the applications of these processes in communications, the internet, and social networking. Among the characteristics of the digital space are interactivity, dynamism, internationality, asynchrony, transformation, connectivity, and dissemination. Related concepts to technology include cyberspace, information society, artificial intelligence, communication technology, and biotechnology (Denden, 2021, pp. 13-20).

Digitalization in education, according to "Horton," refers to the use of information technology and computers to create learning experiences, while "Mank" defined it as that form of education which uses multimedia and information networks in teaching (Bouhamida, 2017, p. 81).

2. Steps of Digitalization in University Education in Algeria

Throughout the centuries, universities around the world have adapted to the significant and profound changes that human societies have undergone. The resilience, continuity, and survival of universities have been dependent on their ability to maintain their functions and tasks, as well as their capacity to adapt to changes. They have had to manage knowledge, and in recent years, new pressures have been placed on universities. These pressures include the need to strengthen changes in ideology and values, as well as the relationship between higher education institutions, the state, and society. The emergence of the knowledge society has made knowledge an indispensable part of the economic market and a driving force behind the new economy. As a result, universities have become producers of new knowledge and sources of creativity and innovation, closely linked to the economy. This has led to a redefinition of their functions as tools for generating and producing knowledge, with the economy becoming a driving force for higher education. Consequently, this has necessitated a reconsideration of university governance and management through strengthening executive leadership and weakening collective governance (Alberto Amaral, 2023, pp. 1-3).

On this basis, we can discuss the various measures undertaken by the Algerian university to employ digitization in its various departments and branches at both the pedagogical and administrative levels. This includes the transition from traditional management practices to electronic management, primarily relying on the use of artificial intelligence systems to manage the higher education sector, as well as moving from traditional education to e-learning and distance education, which depend on modern and advanced technologies to achieve the goals of educational and learning activities. This required implementing several measures and passing through various stages, starting with the training of users, including administrators and professors, to the creation of platforms and electronic applications for teaching.

Distance education had been a direction sought by the Algerian university for some time. However, one of the significant factors that acted as a strong motivator toward it was the widespread outbreak of the COVID-19 virus. This was confirmed by Mohamed Hadi, Assistant Director for Studies, Continuing Education, and Diplomas at the University Center of Tipaza (Jow Plus, 2025).

2.1 Training University Professors in the Use of Educational Media

The training of newly hired professors, offered by the University of Constantine through distance learning for several years, is a true reflection of the goals and objectives of Algerian universities to improve output levels. The importance of this training lies particularly in its focus on the technological aspect, as it emphasizes various educational platforms and media that make the educational process easier and more effective. This training is based on active and direct communication between the learner and the professor, making the learning experience more engaging. What makes this training even more significant is the wide range of information sources and the rapid flow of knowledge from numerous sources, both specialized and general, in multiple languages and formats. This poses a challenge for professors, as they are required to present content that may be provided by others around the world, in different languages, and accessible to learners at any time. This necessitates the development of their intellectual and practical abilities to deliver the same content but in a unique, engaging, and persuasive manner. The challenge here lies in maintaining the importance and quality of the information in a scientific and precise language. Therefore, training assists professors in familiarizing themselves with various technological educational tools, enabling them to deliver blended learning that preserves the value of information while presenting it in an engaging way that captures the learner's attention and encourages their active participation and assessment.

The training was divided into five workshops that are characterized by their interconnection, coordination, and integration. One of these is the third workshop, titled "Creating a Lesson on the Moodle Platform." After the previous workshop addressed the criteria for lesson design through the completed evaluation grid, this workshop focuses on designing a lesson to be placed on the Moodle platform. The lesson plan includes several elements, such as an introduction to the course and instructor, the course content, prior knowledge requirements, course objectives, evaluation methods, learning activities, and the course flow. Afterward, the lesson is designed and uploaded to the platform, with the inclusion of evaluation activities such as formative and diagnostic tests during the lesson, as well as a final test afterward. Mechanisms for interaction with learners and engaging them in the teaching-learning process are also established.

To ensure the presence of scientific and pedagogical standards in the lessons designed and placed on the platform, they should be evaluated by examiners who specialize in the field and have experience in information technology, as well as by students. Communication should be established with them, and they should be provided with a username and password that allows them to access and evaluate the content on the platform. The evaluation should rely on a unified assessment grid that covers all the lesson's contents and elements, offering a clear picture of what should be included in these lessons. In a subsequent stage, the lesson should be redesigned according to the feedback and guidance provided by the examination committee, which will help improve the content and allow the trainee to acquire experiences that will help them address mistakes and shortcomings in the future. This

process also provides an opportunity to benefit from the expertise of the examiners and to better understand the needs and comprehension levels of the students.

As for the stages of designing a lesson and uploading it to the Moodle platform, the first step is for the university administration, specifically those responsible for e-learning, to provide the professor with an account on the platform. Afterward, the professor can make changes to this account, such as changing the password and adding a personal photo. Then, the professor can upload their lessons to the platform, with many options available, such as uploading all lectures together or each lecture separately. Additionally, the lessons can be uploaded in various formats, such as Word, PDF, or video, or a combination of these formats. The professor can modify and add content at any time.

The platform also provides a space for chatting, messaging, and interactive communication with students. This enables the professor to conduct live lessons, exams, or even provide evaluation activities or discussions related to the pedagogical content being presented. Furthermore, any supplementary materials such as illustrations, diagrams, tables, charts, maps, documentaries, educational programs, or educational video clips can be added to enhance the learning experience.

One of the most notable features of the Moodle platform, in addition to the interactive nature between the student and the professor, as well as among students, is the ability to track the progress of lessons and make updates and adjustments periodically. It also offers several options that provide comfort for both the professor and the student. Moodle can support all types of e-learning, including synchronous and asynchronous learning, as well as blended learning, self-directed e-learning, and live-streamed e-learning. Furthermore, in addition to designing and uploading lessons, it allows professors to guide and advise learners, share evaluation and exam results, and interact using various available media such as chat platforms and forums. What gives this platform particular significance and makes it effective in the teaching and learning process is its availability in multiple languages, the opportunity for effective communication between training teams and learners, the continuous monitoring of the learning process, the possibility of ongoing assessment, the availability of feedback, and the ability to continuously modify and update the educational content. Additionally, it stands out for its ease of access for both the teacher and the learner.

This was followed by the fourth workshop titled "Designing an Open Source Electronic Course (MOOC)." Before discussing the details of the workshop, it is important to address the origin of the concept of "MOOC" (Massive Open Online Courses), which dates back to 2008 and is based in California. In terms of meaning, this term refers to a range of open and widely accessible online courses across various scientific and knowledge disciplines. The concept is derived from the communication theory of learning, with pioneers such as "Downes" and "Siemens" being prominent figures. One of its key principles is the emphasis on the constant and rapid change of information, the importance of linking various areas of knowledge, diversifying learning methods, and utilizing available electronic networks and social platforms. It also stresses the need to combine both cognitive and emotional aspects of learning (Al-Harthi, 2016, pp. 107-110).

The importance of this workshop lies in its practical application on how to use open-source resources for education. During the workshop, participants register on the educational platform edX, which provides a learning space where both instructors and students can interact to achieve the main objectives of the lessons. This is a global, international platform that offers open-source online courses, which can be accessed easily at any time, allowing for lessons to be presented in various formats, including educational videos.

In addition to this platform, we can also mention Coursera, which has agreements and contracts with over 62 major universities worldwide, such as the University of Pennsylvania, the University of Philadelphia, and Stanford University. It is also free and non-profit, offering courses in various scientific fields and in different languages. Another platform to note is Udacity, founded by Sebastian Thrun, Mike Sokolsky, and David Stavens, which offers educational courses for learners as well as professional courses for those wishing to specialize in a particular field.

At the Arab level, three platforms can be highlighted as pioneers in this field: Edraak, Rwaq, and Zadi. The Edraak platform was founded by the Queen Rania Foundation for Education and Development, with the participation of Sheikh Mohammed bin Zayed Al Nahyan, Crown Prince of the Emirate of Abu Dhabi, in an effort to develop Arab education and improve education in Arab societies. This is achieved through the platform's offering of high-quality educational courses supervised by experts and specialists from both Arab and non-Arab countries. The platform presents educational content at various levels, and upon completing the courses, learners can obtain qualifications. It also provides users with the opportunity to suggest ideas for developing the platform and the courses it offers.

Rwaq, which is managed by specialists from various countries around the world, is one of the oldest e-learning platforms. It offers many free educational contents in Arabic, targeting different social groups, including students,

teachers, or anyone interested in developing their cognitive abilities. Users of the platform receive a certificate after successfully completing a course.

As for the Zadi platform, which is managed by Mohamed Saleh Al-Munjid and was established in 2015, it specializes in Islamic studies. One of its goals is to bring religious knowledge closer to people by organizing periodic training courses.

2.2 Digital Applications Used in Algerian Higher Education

One of the most prominent characteristics of the current era is the significant scientific and technological advancement, which has led to numerous transformations and changes across various aspects of life—socially, culturally, economically, and educationally. This era is now recognized as the age of digitization. As a result, one of the main goals of education has become development, modernization, and keeping pace with the progress of modern technology, with the aim of creating an interactive learning environment to capture learners' attention and facilitate the exchange of ideas and experiences among them. Information technology is one of the most important and effective means of providing such an environment. These technologies allow professors to access knowledge, experiences, and skills, as well as to learn from educational practices (Ahmed, 2010, pp. 42-44).

2.2.1 Business Incubators Monitoring Platform

Business incubators are defined as physical spaces that provide a range of services for individuals and small businesses. These may also include the provision of office spaces that companies need to start their operations, under flexible rental conditions, in addition to providing the necessary financial and technical support, legal and financial facilities, as well as human resources and various services that allow companies to continue operating. The Technology Center in Jordan, "ipark," defines it as a dynamic process for developing business projects that focuses on young companies, supporting them to achieve survival and growth during the startup phase, which is when they are most vulnerable (Fatima Maamri, 2023, pp. 22-23).

In pursuit of achieving the goals of Algerian universities, which include opening up to the economic environment to provide job opportunities for university graduates, the Algerian Ministry of Higher Education and Scientific Research adopted a policy to support innovative projects in order to make significant contributions to economic development. This was done by establishing a support unit for university business incubators at various university institutions across the country. The initiative began at Mohamed Boudiaf University in M'sila, which became the first incubator to receive the "Label" certification. It was then included in the guide of business incubators by the ministry responsible for emerging businesses and the knowledge economy, to spread the concept and establish many incubators at Algerian universities (Fatima Maamri, 2023, p. 29).

It is noteworthy that initiatives aimed at achieving sustainability in higher education gained significant momentum since 2019, particularly after the election of Abdelmadjid Tebboune as President of Algeria following the political movement that occurred in the same year. During this political transition, special focus and attention were placed on the higher education and scientific research sector, with a clear and direct call for its improvement and development. This focus reflects and reinforces the strong relationship between the educational system in general, and university education in particular, and the economic structure.

In 2020, efforts intensified to link higher education with sustainable economic plans, in line with the goals of diversifying the economy. One manifestation of this connection was the establishment of university business incubators, which aim to support students in innovating and developing business models and creating startups. These incubators serve as mechanisms for integrating academic knowledge and expertise with practical skills, while promoting a culture of innovation and sustainability.

In 2022, Ministerial Decree No. 1244 was issued, establishing a national coordination committee to monitor innovation and university business incubators. The committee's duties include overseeing the development and innovation of projects within universities and ensuring that innovative projects align with national sustainability goals. This committee serves as a central body coordinating efforts, tracking progress, and providing necessary guidance to enhance innovation and entrepreneurship in higher education. Furthermore, Ministerial Law No. 1275, dated September 27, 2022, outlines the framework for higher education strategy and the process of student-driven startup creation, specifying all the steps and stages involved, as well as the parties participating. These decisions affirm Algeria's commitment, through its universities, to driving economic growth and diversification, with sustainability as a central goal, while also emphasizing creativity and innovation (Salim Bouherar, 2025, pp. 01-03).

- Electronic Clearance Portal: This platform facilitates the clearance process and reduces the burdens on those responsible for clearance within university institutions and services.
- Statistics and Performance Indicators Platform: This platform contains data on the needs of university administrations, which is obtained through precise statistics based on artificial intelligence systems. The

data is presented in tables and graphical curves to measure performance indicators and their requirements.

- Chatbot: Aimed at students, this tool is available on the official website of the Ministry of Higher Education and Scientific Research. Its main tasks include answering students' inquiries and concerns regarding registration, orientation, and various administrative procedures.
- Thesis Portal: Established by decision No. 153 issued on May 14, 2012, concerning the creation of a central file for storing theses and how to benefit from this process. It is considered an important and necessary tool to support research, production, and scientific work.
- Platform for Detecting Academic Plagiarism and Citation Percentage: This platform uses a dedicated program to detect the percentage of plagiarism in theses and dissertations, as well as to identify instances of academic dishonesty.
- Platform for Managing and Monitoring Student Movements: This platform aims to address students' inquiries related to monitoring and supervision.
- Platform for Managing and Monitoring Joint Supervision of Doctoral Theses: This platform is designated for theses that involve joint supervision. It allows for providing necessary feedback, offering guidance to facilitate smooth progress, and exchanging expertise in this field.
- Platform for Monitoring Administrative and Technical Users: This platform enables the monitoring of employees' activities, focusing on the performance delivered, competencies, and positions held.
- Platform for Managing and Monitoring International Students: The primary purpose of this platform is to streamline the processes and procedures related to the studies of international students in Algeria.
- Platform for Managing and Monitoring Training and Internships Abroad: This platform includes a set of procedures that allows both professors and students wishing to pursue internships and training abroad to enhance their academic level.
- Digital Platform for Renewing University Scholarships Abroad: This platform is designed for students, enabling them to renew their university scholarships for studying abroad.
- Platform for Managing University Research Training Projects (PPRFU): This platform is dedicated to professors and is supervised by the General Directorate of Education and Training. Through this platform, research project proposals and various works completed in research laboratories are submitted for monitoring and evaluation.
- University Cinema Platform: This platform showcases purposeful artistic works created by students and approved for presentation at university festivals for short and feature films.
- Certification Documentation Platform: This platform is designated for graduates, aiming to simplify the process of certifying the degrees earned, whether a bachelor's, master's, or doctoral degree, and it helps improve the quality of services provided.
- University Transport Platform: This platform includes a database that allows students and even the Directorate of University Services to monitor the movement of university transport buses in terms of time and destination.
- Catering Platform: This platform serves as a means to monitor and measure the catering process by establishing a database.
- University Dormitory Access Monitoring Platform: This pertains to the organization and monitoring of student access to university dormitories. These platforms have been supported by mobile applications, including the following:
    - E-services Application: A mobile application designed for smartphones that serves as a gateway to all services and digital platforms for users within the sector.
    - Web Etu Application: A mobile application for the integrated information system "Progres," which enables students to register, re-register, track their academic progress, and obtain necessary documents.

The following table outlines the main digital platforms that have been discussed:

Table 1. Some Digital Applications in the Higher Education and Scientific Research Sector

Digital Platforms	Link	Usage	Target Audience
dual Platform	http://dual.mesrs.dz	Teaching and learning English remotely for students and faculty	Students and Faculty

		members	
padoc Platform	http://padoc.mesrs.dz	Teaching English to first-year doctoral students	Doctoral Students
Student Platform (ask-me)	http://ask.mesrs.dz	Students submit questions and receive responses from pedagogical staff	Students
PubMed – Algerian Medical Publications Platform	http://pubmed.mesrs.dz	Institutional repository for researchers in the health sector across all specialties	Medical Students and Clinical Professors
ASJP – Institutional Publications Platform	http://www.asjp.cerist.dz	Electronic publishing platform for all accredited and peer-reviewed Algerian scientific journals	Faculty and Students
PSGI – Innovative Project Management System	http://sgpi.mesrs.dz	Digital system for managing innovative projects	Faculty and Students
Platform for Monitoring and Managing International Students	http://progres.mesrs.dz/international-students	Managing and monitoring international student files in accordance with Algerian regulations	Students and Institutions
Platform for Managing and Defending Doctoral Theses	http://progres.mesrs.dz/	Management and defense of doctoral theses and tracking evaluation processes	Doctoral Students
webfve	-	-	-
Business Incubator Monitoring Platform	http://www.anvredet.org.dz/	A center under the National Agency for Research Results Evaluation and Technological Development	Sector Users
Chatbot for Dialogue	https://www.mesrs.dz/	AI-based chatbot that answers various student questions; contains responses to over 1,500 questions related to registration, orientation, and pedagogy	Students
Thesis Portal	https://www.pnst.cerist.dzpestARABE/index.php	Notification of thesis submissions	Sector Institutions
Plagiarism and Citation Rate Detection Platform	https://progres.mesrs.dz/webfve	Aims to detect plagiarism and citation rates in dissertations	Sector Institutions

Source: (University of Algiers 3, 2023).

3. Results of the Digitization of Higher Education

One of the advantages of e-learning is its ability to transcend time and space, as it is accessible anytime and anywhere. It also reduces the cost of education, increases the return on investment, and contributes to breaking psychological barriers between the teacher and the learner. Furthermore, it satisfies the characteristics and aspirations of learners by considering their specific needs. It also allows for immediate and automatic assessment of

learners, as well as direct access to knowledge and expertise from primary sources. Additionally, it fosters interactivity between learners and teachers and reduces the burdens of travel for learners (Tariq Abdel-Raouf Amer, 2015, p. 27).

Kamal Badaari, Minister of Higher Education, confirmed that the goal of digitization is simplification and efficiency through organization and reorganization. The process followed a master plan consisting of seven major axes and 102 operational programs, which will be implemented before the end of 2024. He emphasized that the higher education sector is the only one that possesses an integrated information system. This was also confirmed by Yassine Belkhouja, Deputy Director of Information Systems at the Ministry of Higher Education. The aim of designing and developing digital programs is to facilitate and simplify access to information for the sector's users, in order to reduce the burden on students, who would otherwise need to travel to universities to complete various processes, including registration and obtaining a student ID (Ennahar TV, 2025). The key impacts of digitization can be summarized as follows:

- Simplifying and facilitating access to services for users in the sector.
- Reducing the travel burden for students.
- Saving time, effort, and money.
- Addressing all the questions and concerns raised by students.
- Reducing costs for both service providers and service seekers.

Economically, "Kherchi Iskak," Director of the Higher School of Commerce, confirmed that the electronic applications used in the higher education sector have helped rationalize expenditures and reduce pressure. The "my bus" app, for example, saved 62 million Algerian dinars within two months (Dr. Ishak Kherchi, 2025).

The importance and outcomes of this on the educational process are reflected in the effort to increase the effectiveness of the educational process by actively contributing to the use of information and communication technologies in teaching and learning. This contributes to improving the quality of the educational process and the quality of outcomes. It also helps in providing a high-quality learning environment and enriching the fields of human knowledge to keep pace with global transformations, adapt to innovations in technology, encourage self-directed and lifelong learning, and develop critical thinking. Additionally, it plays a role in achieving the goals of higher education by assisting universities in performing their functions, whether related to providing quality education, developing management, and shifting towards electronic administration, or enhancing transparency in administrative dealings, while establishing principles of democracy and equal opportunities among learners and various university stakeholders. It also allows for expanding the scope of the educational process by enabling everyone to access various sources of knowledge (Bouzaïb, 2022, p. 72).

On the level of scientific research, digitization has contributed to facilitating the research process by providing high-quality scientific material and enabling students to access the references and sources they need with minimal effort and in less time. It has also played a crucial role in benefiting from global experiences in the field of scientific research. This is evident from the mechanisms that allowed for the organization of scientific events through distance learning technologies, facilitating the research process, accessing references from abroad, interacting with researchers from different countries, exchanging knowledge and experiences, and benefiting from research results and studies (Bloul, 2023, pp. 497-499).

Conclusion

The university constitutes an intellectual, scientific, social, and cultural system that can only be understood within the framework of its relationships with the social structure, cultural conditions, and historical context of its existence. It is made up of a set of sub-systems that interact to achieve the major objectives for which it was established. Digitization has become an important strategic choice adopted by the Algerian university to keep up with the digital transformation that has characterized the world in this millennium. Digitization is considered a tool and means, not an end in itself; a tool to facilitate the work of higher education sector users and assist them in fulfilling their professional duties by utilizing the benefits of technology, as well as to improve the quality of services provided by this sector to the individual, society, and nation.

The adoption of digitalization in the management of the higher education sector has occurred in stages, with various levels of implementation. This began with platforms for registration in recruitment competitions organized by the sector, platforms for registering successful candidates in the baccalaureate exams, and the subsequent processes of orientation, selection of scientific fields, appeals, and transfers from one specialty to another and from one university to another. It also includes the registration processes for university services such as accommodation, transportation, and scholarships, as well as platforms for viewing exam results. The Moodle platform, which is an

educational platform that allows university students to access the knowledge and information they need, is also part of this digital transition. There are many other platforms, including those for submitting complaints or addressing questions and concerns.

Believing in its central role in the economy, Algerian universities have not only focused on training the executives and skills needed by economic institutions, but have also gone further by creating job opportunities through business incubators. These incubators foster the development of start-ups that contribute to job creation and provide products needed by the national market to meet the needs of individuals.

References

1. Ahmed, A.-H. R. (2010). *Distance Education in the Arab World and the Challenges of the 21st Century* (1st ed.). Cairo: Anglo-Egyptian Library.
2. Alberto Amaral, A. M. (2023). *Higher Education Management and Governance.* Lypiatts, UK: Edward Elgar Publishing Limited.
3. Al-Harthi, I. b. (2016, 04 1). The Requirements for Activating Massive Open Online Courses (MOOCs) and Their Importance, Availability, and Attitudes Towards Them in Saudi Universities. *Journal of the Faculty of Education, Benha, 106*(1).
4. Amer, T. A.-R. (2015). *E-Learning and E-Teaching.* Al-Yazuri Scientific House.
5. Amer, T. A.-R. (2015). *E-Learning and Virtual Education: Contemporary Global Trends.* Cairo: Arab Group for Training and Publishing.
6. Amer, T. A.-R. (2017). *University Education.* Amman: Al-Yazuri Scientific House.
7. Bloul, F. (2023). Digitalization of Higher Education in Algeria: Will the "Zero Paper" Motto Be Achieved in Algerian Universities? *Al-Mufakkir Journal, 18*(1).
8. Bouhamida, N. (2017, 9). The Impact of Digitalization on Improving Academic Achievement Among Students. *Al-Hikmah Journal of Educational and Psychological Studies, 5*(11).
9. Bouzaïb, B. (2022). Digitalization and Its Role in Modernizing Higher Education in Algeria. *Journal of Public Service Quality in Sociological Studies and Administrative Development, 5*(2).
10. Denden, A. (2021). *International Relations in the Age of Digital Technology.* Academic Book Center.
11. Dr. Ishak Kherchi. (2025). *Dr. Ishak Kherchi YouTube Channel.* Retrieved from YouTube: https://www.youtube.com/@dr.ishakkherchi7794
12. Ennahar TV. (2025). *Ennahar TV Plus YouTube Channel.* Retrieved from YouTube: https://www.youtube.com/@EnnaharTvPlus
13. Fatima Maamri, L. M. (2023). University Business Incubators as Support for Young Entrepreneurs from University Graduates: The Case of the Business Incubator at Ahmed Ben Bella University of Oran 1. *Shuaa Journal of Economic Studies, 7*(2).
14. Jow Plus. (2025). *Jow Plus YouTube Channel.* Retrieved from YouTube: https://www.youtube.com/@JowPlus
15. Salim Bouherar, S. S. (2025). *Sustainability in Algerian Higher Education: Balancing Emerging Reforms, Outcomes, and Practices.* Switzerland: Springer Nature Switzerland AG.
16. University of Algiers 3. (2023, 2 15). *Digital Platforms for the Ministry of Higher Education and Scientific Research According to the Digital Transformation Strategy (BSN).* Retrieved from University of Algiers 3: https://fsic.univ-alger3.dz/?p=17757

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Teaching Competencies of Vocational Training Instructors and Their Implementation from the Perspective of Trainees *(A Field Study at the National Institute of Specialized Vocational Training in Management – Guelma)*

Assia Amrane
Phd
Laboratory of Ergonomics and Applied Research in Psychology and Educational Sciences, Faculty of Social and Human Sciences, University of Arabi Ben Mhidi- Oum El Bouaghi
Algeria
Email: assia.amrane@univ-oeb.dz, Orcid: 0009-006-4876-7202

Saliha Guidoum
Dr.
Laboratory of Ergonomics and Applied Research in Psychology and Educational Sciences, Faculty of Social and Human Sciences, University of Arabi Ben Mhidi- Oum El Bouaghi
Algeria
E-mail: saliha.guidoum@univ-oeb.dz; Orcid. 0000-0001-7620-0699

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Teaching competencies, vocational training instructors, vocational training, trainees.

Abstract
This study aims to examine the extent to which vocational training instructors apply teaching competencies, as perceived by trainees. To achieve this objective, a descriptive survey methodology was employed, utilizing a questionnaire as the primary research instrument. The questionnaire consisted of 41 items categorized into four domains: lesson planning, lesson implementation, lesson assessment, and classroom communication and interaction. The study sample comprised 233 trainees enrolled at the National Institute of Specialized Vocational Training in Management in Guelma during the 2023/2024 academic year. Data analysis and hypothesis testing were conducted using the SPSS statistical software. The findings indicate that vocational training instructors demonstrate a high level of competency in lesson planning, implementation, assessment, and classroom communication and interaction.

Citation. Amrane A., Saliha G. (2025Teaching Competencies of Vocational Training Instructors and Their Implementation from the Perspective of Trainees (A Field Study at the National Institute of Specialized Vocational Training in Management – Guelma). *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 683–699. https://doi.org/10.56352/sei/8.11.54

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 30.04.2025 | Accepted: 11.05.2025 | Published: 05.09.2025 (available online)

Introduction / Research Problem

The advancement of nations is increasingly dependent on their knowledge capital and the presence of a well-educated, skilled workforce capable of innovation, productivity, and competition. In Algeria, the vocational training and education sector is recognized as a strategic pillar for national development. The government relies on this sector to supply a qualified workforce that meets labor market demands and contributes to sustainable economic, social, and service-sector development. This is achieved through investment in human capital, equipping individuals with the necessary skills and competencies for labor market integration and active participation in society.

Vocational training institutions are responsible for preparing a highly skilled and well-trained workforce ready to enter the job market. However, this objective can only be realized if vocational training instructors possess a high level of teaching competencies. These instructors serve as the cornerstone of any successful training process, requiring a blend of academic, professional, personal, and social qualifications. It is widely acknowledged that instructors play a crucial role in shaping the quality of vocational training outcomes to align with contemporary technological and industrial advancements. They instill perseverance and a strong work ethic in trainees while equipping them with both theoretical knowledge and practical skills. Moreover, they ensure that trainees acquire comprehensive expertise in their respective fields, enabling them to integrate effectively into the workforce.

Understanding teaching competencies is of paramount importance, as they constitute the minimum essential skill set required to achieve desired educational outcomes efficiently, minimizing time and effort while maximizing effectiveness. This underscores the need to focus on instructors' competencies in lesson planning, implementation, assessment, and classroom communication and interaction. Deficiencies in these areas can significantly hinder the achievement of vocational training objectives.

Given that instructors' competency levels may vary, this study seeks to assess current instructional practices, their effectiveness, areas of improvement, and the extent to which vocational training instructors incorporate modern teaching methods. Since instructors' performance serves as a key indicator of vocational training effectiveness, the study aims to address the following primary research question:

- **To what extent do vocational training instructors apply teaching competencies from the perspective of trainees?**

From this central question, the study explores the following sub-questions:

- To what extent do vocational training instructors apply lesson planning competencies from the perspective of trainees?
- To what extent do vocational training instructors apply lesson implementation competencies from the perspective of trainees?
- To what extent do vocational training instructors apply lesson assessment competencies from the perspective of trainees?
- To what extent do vocational training instructors apply classroom communication and interaction competencies from the perspective of trainees?

1. Research Hypotheses

General Hypothesis:

- Vocational training instructors demonstrate a high level of teaching competency, as perceived by trainees.

Sub-Hypotheses:

- Vocational training instructors demonstrate a high level of competency in lesson planning, as perceived by trainees.
- Vocational training instructors demonstrate a high level of competency in lesson implementation, as perceived by trainees.
- Vocational training instructors demonstrate a high level of competency in lesson assessment, as perceived by trainees.
- Vocational training instructors demonstrate a high level of competency in classroom communication and interaction, as perceived by trainees.

2. Research Objectives

This study aims to assess the extent to which vocational training instructors apply teaching competencies—including lesson planning, implementation, assessment, and classroom communication and interaction—from the perspective of trainees.

3. Significance of the Study

This study highlights the importance of the vocational training sector, which plays a crucial role in professional development and sustainable economic growth. It also emphasizes the vital role of vocational training instructors. Ensuring their effectiveness and competency directly impacts trainees' ability to acquire the necessary knowledge and skills to perform their professions and trades at the highest level.

Additionally, this study contributes to diagnosing the current state of teaching competencies and assessing the extent to which instructors possess them. Furthermore, it provides findings that may aid relevant authorities in decision-making, enhancing, and developing teaching competencies among vocational training instructors. This is achieved by equipping vocational training and education supervisors with a comprehensive list of instructors' training needs related to teaching competencies, which can be utilized for guidance and professional development.

4. Review of Previous Studies

A review of various studies focusing on teaching competencies among instructors is presented below, arranged chronologically from the earliest to the most recent:

1. Al-Hashem & Al-Moussawi (2003): this study aimed to assess the performance level of social studies teachers for sixth-grade students in Bahrain based on fundamental teaching competencies. Using a descriptive research approach, the researchers developed a checklist of essential teaching competencies and a classroom observation tool. The study was conducted on a sample of 28 teachers. The findings revealed that 42% of the competencies were performed at a high level of proficiency, 31% at a moderate level, and 27% at a low level. Teachers demonstrated moderate proficiency in lesson planning and implementation. (Jamal Suleiman, 2011, p. 340)

2. Al-Ghaziwat (2005): This study evaluated teaching competencies among faculty members of the Faculty of Educational Sciences at Mu'tah University, as perceived by social studies students, considering gender and academic level as variables. The descriptive methodology was applied, and a questionnaire was administered to a sample of 216 students. The results indicated that most faculty members still relied on traditional teaching methods, where the teacher remained the primary source of knowledge, and students played a passive role. The study also found that faculty members were often rigid in their opinions, showed little sensitivity to students' psychological and academic challenges, relied heavily on essay-based exams, and primarily used summative assessment methods.

Regarding communication competencies, the study showed that while some instructors treated students equitably, others adopted an authoritative approach. T-test results indicated statistically significant differences at the 0.05 level in students' evaluations of faculty performance, favoring female instructors in assessment and interpersonal skills.

3. Daidish (2006): This study aimed to evaluate the teaching competencies (planning, implementation, and assessment) of first-year middle school mathematics teachers in Sétif, considering the impact of training type and teaching experience. The study adopted a descriptive evaluative approach, using an observation checklist applied to a randomly selected cluster sample of 31 mathematics teachers. The results revealed variation in individual teachers' competency levels, with overall teaching performance falling below the high proficiency threshold of 70%. No statistically significant differences were found based on training type or experience.

4. Rababaa (2015): This study explored the extent to which faculty members at the College of Sharia and Islamic Studies at Qassim University possessed teaching competencies from their own perspectives during the 2014/2015 academic year. A sample of 97 faculty members was selected randomly, and the study adopted a descriptive survey approach using a questionnaire as the primary research tool. The results showed that faculty members demonstrated a high level of competency in lesson planning, implementation, and assessment.

5. Abdul-Momani (2019): This study aimed to identify the teaching competencies of vocational education teachers in basic schools under the Directorate of Education in Ajloun, Jordan. It focused on competencies related to lesson implementation and teaching methods. A descriptive research approach was employed, and a questionnaire consisting of 26 items was administered to a sample of 50 teachers. The findings indicated an overall competency level of 73%, surpassing the lesson implementation competency, which scored 71%.

6. Slimani (2020): This study examined the actual practice of teaching competencies among primary school teachers in Tiaret, employing a descriptive methodology. A structured observation checklist was applied to a purposive sample of 130 teachers from 18 primary schools. The findings revealed that primary school teachers generally exhibited satisfactory teaching competencies, with classroom interaction being the most effectively demonstrated competency.

Critique of Previous Studies

A review of previous research indicates that the topic of teaching competencies has garnered significant interest among educators. The key points of comparison between the reviewed studies are as follows:

- **Objective:**
  The studies varied in their objectives:
  - Some focused on assessing the **actual practice** of teaching competencies among faculty members, such as *Slimani (2020)*.
  - Others aimed at **evaluating** teaching competencies, like *Daidish (2005)* and *Al-Ghaziwat (2005)*.
  - Some studies examined the **extent to which faculty members possess** teaching competencies, as in *Rababaa (2015)*.
  - In contrast, the present study seeks to determine the **degree of application** of teaching competencies among vocational training instructors.
- **Methodology:**
  The studies differed in their research approaches:
  - Several studies employed a **descriptive methodology**, such as *Al-Hashem & Al-Moussawi (2003)*, *Al-Ghaziwat (2005)*, *Abdul-Momani (2019)*, and *Slimani (2020)*.
  - Some adopted a **descriptive evaluative approach**, like *Daidish (2005)*.
  - The current study aligns methodologically with *Rababaa (2015)* in utilizing a **descriptive survey approach**.
- **Sample:**

- Some studies, such as *Al-Ghaziwat (2005)*, targeted **university students**.
- Other studies focused on **faculty members**, as in *Daidish (2005)*, *Rababaa (2015)*, and *Abdul-Momani (2019)*.
- The present study differs from all previous studies as it selects **trainees** as its sample.

- **Research Instrument:**
  - Most previous studies, including the present study, utilized **questionnaires** for data collection.
  - However, *Slimani (2020)* and *Daidish (2005)* used **structured observation checklists**.
- **Findings:**
  The results of previous studies varied depending on their specific objectives.

The current study stands out from related research as one of the few studies—**to the researcher's knowledge**—that examines the **degree of application** of teaching competencies among vocational training instructors, as perceived by trainees in vocational institutions in Guelma.

The review of prior research provided valuable insights in:

- Formulating the research problem.
- Expanding theoretical knowledge related to teaching competencies.
- Selecting the appropriate research methodology.
- Choosing the most effective data collection tool.
- Analyzing, discussing, and interpreting results.
- Identifying relevant sources and references.

5. Operational Definitions of Study Terms

- **Teaching Competencies:**In this study, teaching competencies refer to the ability of vocational training instructors to effectively perform lesson planning, implementation, assessment, and classroom communication and interaction at a high level of proficiency. These competencies are measured based on the total raw scores obtained by vocational training instructors through trainees' responses to the teaching competencies questionnaire developed for this study.
- **Vocational Training Instructors:**This term refers to first- and second-rank instructors specializing in vocational training and education, who practice their profession at the National Institute of Specialized Vocational Training in Management in Guelma during the 2023/2024 training year.
- **Trainees:**The trainees in this study are individuals enrolled in vocational training through in-person training programs at the National Institute of Specialized Vocational Training in Management in Guelma during the 2023/2024 training year.

6. Theoretical Background of the Study

7.1. Teaching Competency

Definition of Competency

- **Al-Duraij (2003)** defines competency as:
  "Acquired abilities that enable an individual to act and perform in a specific context, comprising integrated knowledge, skills, and attitudes. An individual utilizes these abilities to address and solve problems within a given situation." (Mohammed, 2003, p. 16)
- **Good (as cited in Al-Shaib & Bin Zahi, 2011)** defines competency as:
  "The ability to achieve desired outcomes efficiently, minimizing effort, time, and expenses." (Al-Shaib & Bin Zahi, 2011, p. 16)

- **Al-Fatlawi (2003)** defines competency as:
  "A set of behavioral abilities expressed through cognitive, skill-based, and affective tasks that contribute to the expected final performance at a satisfactory level of effectiveness. These abilities can be observed and evaluated through various assessment methods." (Al-Fatlawi, 2003, p. 29)

Based on the above definitions, competency can be understood as an acquired ability manifested through a combination of cognitive, skill-based, and affective activities. It is demonstrated by an individual effectively and proficiently, with minimal effort and cost, and within optimal time constraints.

Teaching Competencies

Definition of Teaching Competencies

- **Mur'i (1983)** defines teaching competencies as:

  "Precisely and clearly defined behavioral objectives that describe all the knowledge, skills, and attitudes necessary for a teacher to achieve effective teaching."

- **Muslim (as cited in Karam, 2002, p. 130)** defines them as:

  "A set of abilities and skills that a teacher must possess, enabling them to effectively and efficiently fulfill their duties, roles, and responsibilities, ultimately enhancing the educational process—particularly in terms of the teacher's ability to successfully transfer knowledge to students."

From the above definitions, it can be concluded that teaching competencies encompass a combination of behavioral and cognitive objectives that teachers must master to ensure effective teaching.

7.2. Classification of Teaching Competencies

Several educational studies have proposed different classifications of teaching competencies. Below are some notable models:

- **Robert's Classification (1975):**Presented at the annual meeting of the **American Educational Research Association (AERA)**, this classification—later known as **Robert's Teaching Competency Model**—includes the following domains:
  1. Knowledge
  2. Behavior
  3. Attitudes
  4. Outcomes and Effects
  5. Experience *(Muflih, 1998, p. 63)*
- **Al-Laqani & Radwan's Classification:**This classification categorizes competencies as follows:
  1. Teaching proficiency
  2. Effective use of psychology
  3. Establishing positive interpersonal relationships within the institution
  4. Connecting the school with the local community
  5. Leadership ability
  6. Ability to fulfill professional responsibilities *(Al-Fatlawi, 2003, pp. 56-57)*

- **Fawzi Attwa's Classification:**Based on the level of specificity and generalization, teaching competencies were divided into three categories:
  1. General Educational Competencies
  2. Specific Educational Competencies
  3. Supportive Competencies *(Al-Azraq, 2000, p. 28)*
- **Al-Fatlawi's Classification (2003):**
  1. Scientific Competency and Professional Development
  2. Competency in Educational Objectives and Philosophy
  3. Lesson Planning Competency
  4. Lesson Implementation Competency
  5. Interpersonal Skills and Classroom Management Competency *(Al-Fatlawi, 2003, pp. 56-57)*

Classification of Teaching Competencies in the Present Study

Based on the research objectives and in light of the aforementioned classifications, the present study classifies teaching competencies into the following four domains:

1. Lesson Planning Competency
2. Lesson Implementation Competency
3. Lesson Assessment Competency
4. Classroom Communication and Interaction Competency

7.3. Vocational Training

- **Aqili (2005)** defines vocational training as:

  "A structured process consisting of planned programs designed to equip human resources with the necessary knowledge and skills to perform their current jobs at a high level of proficiency through continuous improvement and performance development."

- **Pierre Casse (1949, p. 48)** defines vocational training as:

  "A process aimed at developing individuals' professional and technical skills to enhance their efficiency and effectiveness in carrying out tasks and responsibilities related to their current or future jobs."

From these definitions, vocational training can be understood as a systematic and pre-planned process that imparts essential knowledge and skills to trainees, enabling them to perform their professional duties with high efficiency and competence.

Role and Responsibilities of Vocational Training Instructors

According to official decrees and regulations, the responsibilities of vocational training instructors vary depending on their rank. This study focuses on first- and second-rank instructors, as defined in Articles 32 and 33 of the Official Gazette (2009, pp. 7-8).

Responsibilities of First-Rank Vocational Training Instructors (Article 32):

First-rank instructors are responsible for all forms of vocational training and are specifically assigned the following duties:

- Delivering theoretical and practical instruction in one or more subjects.
- Supervising internships and professional development courses for vocational training instructors.
- Participating in organizing, conducting, and evaluating professional examinations, tests, and competitions.
- Assisting in the planning and evaluation of vocational training programs in professional settings.
- Contributing to the development of training curricula and reference materials.
- Engaging in technical and pedagogical research.
- Required to conduct 18 to 22 teaching hours per week.

(Source: Official Gazette, 2009, pp. 7-8)

Responsibilities of Second-Rank Vocational Training Instructors (Article 33):

Second-rank instructors hold advanced teaching and training responsibilities, including:

- Delivering **theoretical and practical instruction** in one or more subjects.
- Training **vocational training supervisors and managers**.
  - Providing **professional development training** for vocational training instructors.
  - Offering **advanced training and capacity-building programs** for first-rank instructors.
  - Organizing and overseeing **competitions, professional examinations, and assessments**.
  - Conducting **research and developing vocational training curricula**.
  - Designing and preparing **lesson content and pedagogical resources** for vocational training institutions.
  - Required to conduct **18 to 22 teaching hours per week**.

(Source: Official Gazette, 2009, p. 8)

From the above, it can be concluded that, regardless of rank, vocational training instructors hold significant responsibilities in technical, pedagogical, and training aspects, as well as in management and administration. In addition to their instructional role, they are subject matter experts tasked with effectively delivering both theoretical knowledge and practical skills to trainees, ensuring a well-rounded vocational education.

7. Methodological Procedures of the Study

8.1. Research Methodology

To achieve the objectives of the present study, the descriptive survey method was adopted, as it is the most suitable approach for this research.

8.2. Study Population

8.2. Target Population

The target population consists of trainees (both male and female) enrolled in in-person vocational training programs at the National Institute of Specialized Vocational Training in Management in Guelma. As of April 2024, based on the monthly report from the In-Person Training and Internship Monitoring Service, the total number of trainees was 315.

8.2.2. Statistical Population

The statistical population consists of trainees enrolled in four semesters at the institute, totaling 233 trainees.

Table 1: Distribution of the Statistical Population by Gender and Specialization

Specialization	Number of Branches	Semester	Males	Females	Total
Human Resource Management	1	4	06	29	35
Documentation & Archiving	1	3	06	05	11
Digital Systems (IT & Networks)	1	3	07	04	11
Early Childhood Education	1	2	0	30	30
Executive Secretariat	2	2	06	52	58
Accounting & Management	2	2	10	41	51
Human Resource Management	2	1	11	26	37
Total	-	-	46	187	233

The questionnaire was administered to all members of the statistical population (233 trainees) enrolled at the National Institute of Specialized Vocational Training in Management in Guelma.

8.3. Data Collection Instrument

To measure teaching competencies among vocational training instructors, a questionnaire was developed after reviewing theoretical literature and previous related studies. The questionnaire consists of four domains with 41 items, as shown in the table below.

Table 2: Distribution of Questionnaire Items by Domain

Domain	Number of Items	Item Numbers
Lesson Planning Competency	07	1, 2, 3, 4, 5, 6, 7
Lesson Implementation Competency	15	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22
Lesson Assessment Competency	10	23, 24, 25, 26, 27, 28, 29, 30, 31, 32
Classroom Communication & Interaction Competency	09	33, 34, 35, 36, 37, 38, 39, 40, 41

The questionnaire was structured using a **three-point Likert scale** with response options:

- **High** (3)
- **Moderate** (2)
- **Low** (1)

Table 3: Interpretation of Teaching Competency Scores by Domain

Score Range	Competency Level

Score Range	Competency Level
[1 – 1.66]	Low
[1.67 – 2.33]	Moderate
[2.34 – 3]	High

8. Psychometric Properties of the Study Instrument (Validity and Reliability)

Following the preparation of the questionnaire, it was administered to a pilot sample of 15 trainees. The Statistical Package for the Social Sciences (SPSS) was used to analyze the data and assess the psychometric properties of the instrument.

9.1. Validity

To ensure the validity of the questionnaire, two types of validity were examined:

1.9.1. Face Validity

Face validity was assessed by presenting the initial version of the questionnaire to a panel of experts specializing in pedagogical engineering. The experts evaluated the clarity of the items and their relevance to the measured domains. Based on their feedback, some items were reworded or clarified, and the instrument was finalized for pilot testing.

1.9.2. Intrinsic Validity

Intrinsic validity refers to the accuracy of the test results, ensuring they are free from measurement errors. It is determined by calculating the square root of the reliability coefficient:

Intrinsic Validity=Reliability Coefficient\text{Intrinsic Validity} = \sqrt{\text{Reliability Coefficient}}Intrinsic Validity=Reliability Coefficient

Table 4: Intrinsic Validity of the Questionnaire

Intrinsic Validity	Total Items	Sample Size
0.864	41	15

The table indicates that the **intrinsic validity of the questionnaire is 0.864**, which is **high**, confirming the validity of the questionnaire items.

9.2. Reliability

To assess the reliability of the study instrument, **Cronbach's Alpha** coefficient was calculated. The results are presented in the table below:

Table 5: Cronbach's Alpha Reliability Coefficient

Cronbach's Alpha	Total Items	Sample Size
0.748	41	15

The **Cronbach's Alpha value** for the questionnaire is **0.748**, which is **high**, indicating strong reliability. This confirms that the questionnaire is **consistent and suitable for application** in the study.

9. Study Scope

10.1. Time Scope

The main study was conducted during the second semester of the 2023/2024 training year.

10.2. Spatial Scope

The fieldwork was carried out at the National Institute of Specialized Vocational Training in Management – Djebabla Kaddour in Guelma.

10.3. Human Scope

The study targeted trainees enrolled in in-person vocational training programs across four semesters, totaling 233 trainees for the 2023/2024 training year.

10. Statistical Methods Used

Data were processed using the Statistical Package for the Social Sciences (SPSS) to calculate:

- Arithmetic means
- Weighted averages
- Standard deviations
- Cronbach's Alpha correlation coefficient to assess the reliability of the study instrument.

11. Presentation and Discussion of Study Results

12.1. Presentation and Discussion of the First Hypothesis Result

Hypothesis 1:

"The degree of application of lesson planning competency among vocational training instructors is high from the perspective of trainees."

To test this hypothesis, arithmetic means and standard deviations of respondents' answers for the first domain were calculated.

Table 6: Arithmetic Mean and Standard Deviation for Lesson Planning Competency

Domain	Arithmetic Mean	Standard Deviation	Level
Lesson Planning Competency	2.39	0.49	High

The results of Table 6 indicate that the arithmetic mean of respondents' answers for the first domain is 2.39, with a standard deviation of 0.49, suggesting that the degree of application of lesson planning competency is high.

This outcome can be attributed to the significant emphasis placed on lesson planning by vocational training instructors, reflecting strong control over planning elements. This proficiency contributes to performance improvement and enhances the overall training process.

The instructors' commitment to lesson planning is evident in their effective execution of tasks, including:
✔ Thorough and well-structured preparation of training sessions
✔ Clear definition of steps and required stages
✔ Balancing the selection of appropriate instructional methods, tools, and activities
✔ Conducting assessments and setting clear learning objectives
✔ Ensuring trainees acquire the necessary skills to achieve the desired learning outcomes in an optimal timeframe

These factors collectively contribute to reducing randomness in the teaching process, ensuring a structured and effective training environment.

This finding aligns with Rababaa (2015), which concluded that faculty members demonstrated high competency levels in lesson planning, implementation, and assessment. However, it contrasts with Al-Hashem & Al-Moussawi (2005), which found that the level of mastery of lesson planning competency was moderate (31%). Additionally, it disagrees with Daidish (2006), which reported weak performance in core teaching competencies (planning, implementation, and assessment) compared to the high competency benchmark of over 70%.

12.2. Presentation and Discussion of the Second Hypothesis Result

Hypothesis 2:

"The degree of application of lesson implementation competency among vocational training instructors is high from the perspective of trainees."

To test this hypothesis, arithmetic means and standard deviations of respondents' answers for the second domain were calculated.

Table 7: Arithmetic Mean and Standard Deviation for Lesson Implementation Competency

Domain	Arithmetic Mean	Standard Deviation	Level
Lesson Implementation Competency	2.35	0.51	High

The results indicate that the arithmetic mean for lesson implementation competency is 2.35, with a standard deviation of 0.51, suggesting a high level of application.

This suggests that instructors demonstrate strong competency in lesson execution, particularly in:
✔Engaging trainees' interest at the beginning of lessons
✔Using varied teaching methods tailored to trainees' characteristics
✔Effectively utilizing instructional resources
✔ Providing continuous monitoring, feedback, and guidance

This result aligns with Abdul-Momani (2019), where lesson implementation competency scored 3.43 (71%), indicating a high competency level. It also agrees with Rababaa (2015), which found that faculty members possessed high competency levels in planning, implementation, and assessment.

12.3. Presentation and Discussion of the Third Hypothesis Result

Hypothesis 3:

"The degree of application of lesson assessment competency among vocational training instructors is high from the perspective of trainees."

To test this hypothesis, arithmetic means and standard deviations of respondents' answers for the third domain were calculated.

Table 8: Arithmetic Mean and Standard Deviation for Lesson Assessment Competency

Domain	Arithmetic Mean	Standard Deviation	Level
Lesson Assessment Competency	2.34	0.55	High

The results indicate that the arithmetic mean for lesson assessment competency is 2.34, with a standard deviation of 0.55, suggesting a high level of application.

This result suggests that vocational training instructors understand the importance of assessment in the training process, as it influences trainees' cognitive, affective, and psychomotor development.

Key aspects of assessment competency include:
✔ Identifying trainees' strengths and reinforcing them
✔ Diagnosing weaknesses and applying corrective measures
✔ Utilizing diverse assessment tools (oral, written, and practical evaluations)
✔ Ensuring alignment between assessment tasks and learning objectives

This result aligns with Rababaa (2015), which found that faculty members demonstrated a high level of competency in assessment. However, it contrasts with Al-Ghaziwat (2005), which found that instructors relied heavily on essay-based exams and final assessments, rather than utilizing diverse evaluation methods.

12.4. Presentation and Discussion of the Fourth Hypothesis Result

Hypothesis 4:

"The degree of application of classroom communication and interaction competency among vocational training instructors is high from the perspective of trainees."

To test this hypothesis, arithmetic means and standard deviations of respondents' answers for the fourth domain were calculated.

Table 9: Arithmetic Mean and Standard Deviation for Classroom Communication and Interaction Competency

Domain	Arithmetic Mean	Standard Deviation	Level
Classroom Communication and Interaction Competency	2.40	0.54	High

The results indicate that the arithmetic mean for classroom communication and interaction competency is 2.40, with a standard deviation of 0.54, suggesting a high level of application.

Key elements of effective classroom communication include:
✔ Establishing direct and engaging interactions with trainees
✔ Creating a dynamic and interactive learning environment
✔ Using trainees' names to personalize communication
✔ Listening actively and encouraging discussion
✔ Adapting vocal tone and body language to maintain engagement

This result aligns with Slimani (2020), which found that primary school teachers demonstrated strong communication and interaction skills in their classrooms.

12.5. Presentation and Discussion of the General Hypothesis Result

General Hypothesis:

"The degree of application of teaching competencies among vocational training instructors is high from the perspective of trainees."

To test this hypothesis, arithmetic means and standard deviations of respondents' answers for all domains were calculated.

Table 10: Overall Arithmetic Mean and Standard Deviation for Teaching Competencies

Domain	Arithmetic Mean	Standard Deviation	Level

Domain	Arithmetic Mean	Standard Deviation	Level
Lesson Planning	2.39	0.49	High
Lesson Implementation	2.35	0.51	High
Lesson Assessment	2.33	0.55	High
Classroom Communication & Interaction	2.40	0.54	High
Overall Teaching Competencies	**2.36**	**0.47**	**High**

Based on the results in Table 10, it is observed that the arithmetic mean of respondents' answers to the questionnaire items is 2.36, with a standard deviation of 0.47, indicating that the overall teaching competency level among vocational training instructors is high.

This result suggests that instructors demonstrate strong proficiency across all dimensions of teaching competencies, enabling them to perform their duties with efficiency and precision. This high competency level may be attributed to the effectiveness of the pedagogical training program undertaken by most instructors at the National Institute of Specialized Vocational Training in Management – Djebabla Kaddour in Guelma.

Approximately 13 first-rank vocational training instructors participated in this training during the 2023/2024 academic year, undergoing an official certification process at the time of the study. The positive impact of the pedagogical training is evident in practice, explaining the high degree of instructors' mastery of various teaching competencies.

12. Final Conclusion

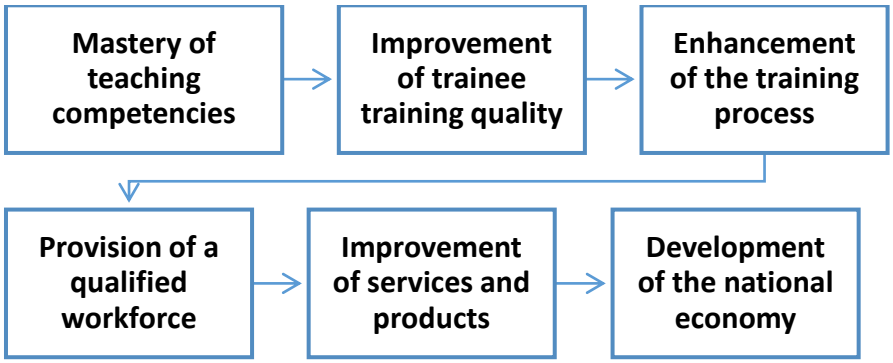
Based on the field study conducted on 233 trainees and their evaluation of vocational training instructors, the findings reveal a key equation:

- A highly competent instructor one possessing advanced teaching skills and abilities to effectively transfer knowledge directly enhances the quality of training received by trainees.
- High-quality training enables trainees to acquire the necessary skills for seamless integration into the labor market, leading to an overall improvement in vocational education and training.
- Enhancements in lesson planning, implementation, assessment, and classroom communication and interaction contribute to a comprehensive and effective training experience for trainees.
- As a direct outcome of quality education and training, the labor market benefits from a well-trained and highly qualified workforce, which enhances overall workforce efficiency and productivity.

Impact on the Economy and Society

Improved workforce skills lead to higher quality products and services in both industrial and service sectors.
Enhanced competitiveness and better service offerings contribute to market growth and economic stability.
A well-trained workforce drives economic development by improving productivity and service quality.
Sustainable development is achieved, fostering continuous societal progress.

Figure (01): The Development of Teaching Competency Mastery Among Vocational Training Instructors


Mastery of teaching competencies
Improvement of trainee training quality
Enhancement of the training process
Provision of a qualified workforce
Improvement of services and products
Development of the national economy

Conclusion

A vocational training instructor's expertise in their field, mastery of teaching competencies, and comprehensive understanding of instructional methods ensure the delivery of effective and tailored training that meets trainees' needs. These competencies encompass both theoretical knowledge and practical skills, enabling instructors to accurately and efficiently transfer technical and vocational expertise.

A well-rounded instructor:
✔ Plans lessons effectively, ensuring structured and goal-oriented training.
✔ Executes lessons skillfully, selecting appropriate teaching methods and resources.
✔ Communicates and interacts efficiently with trainees, guiding them throughout the learning process.
✔ Conducts periodic assessments to monitor progress and ensure that both educational and professional objectives are achieved.

By investing in the continuous development of these teaching competencies, relevant authorities can enhance the quality of vocational education, improve trainees' skill levels, and better align training programs with labor market demands. This, in turn, contributes to trainees' success in their professional careers while narrowing the gap between education and workforce requirements.

Recommendations and Suggestions

Based on the study findings, the following recommendations are proposed:

✔ Conduct similar studies in vocational training and apprenticeship centers to assess the degree of teaching competency mastery among vocational training instructors.

✔ Adopt and reinforce all the competencies identified in this study, as they were rated highly by the study participants.

✔ Carry out survey studies to identify the training needs of vocational training instructors in relation to teaching competencies.

✔ Encourage foundational training programs, whether through initial teacher training or pedagogical mentoring, under the supervision of inspectors, to enhance the essential competencies required for teaching.

✔ Organize training sessions, workshops, and scientific conferences to develop instructors' knowledge, skills, and attitudes, thereby improving the quality of vocational education.

✔ Implement continuous professional development programs post-employment as a priority for enhancing teaching performance.

✔ Conduct regular and periodic assessments to maintain the required performance standards.
✔ Introduce financial and non-financial incentives to reward outstanding instructors in vocational training institutions for their excellence in teaching.

References

1. Karam, I. M. (2002). *The Level of Mastery of Social Studies Teachers in Kuwait of Teaching Competencies (Vol. 3).* University of Bahrain: Journal of Psychological and Educational Sciences.
2. Official Gazette of the People's Democratic Republic of Algeria. (2009). Algeria.
3. Driij, M. (2003). *Competencies in Education for a Scientific Foundation of the Integrated Curriculum.* Casablanca, Morocco: Ramses Publishing and Distribution.
4. Al-Fatlawi, S. M. K. (2003). *Teaching Competencies: Concept, Training, and Performance.* Jordan: Dar Al-Shorouk for Publishing and Distribution.
5. Mar'i, T. (1983). *Educational Competencies in Light of Systems.* Jordan: Dar Al-Fuqan for Publishing and Distribution.
6. Al-Azraq, A. S. (2000). *Educational Psychology for Teachers.* Libya: Tripoli Scientific Library.
7. Daidish, A. S. (2006). *Evaluation of Teaching Competencies for First-Year Middle School Mathematics Teachers.* Sétif: Ferhat Abbas University.
8. Rababaa, A. M. A. (2015). *The Extent to Which Faculty Members at the College of Sharia and Islamic Studies at Qassim University Possess Teaching Competencies from Their Perspective (Vol. 3).* Al-Quds Open University Journal for Educational and Psychological Research and Studies.
9. Aqeeli, O. W. (2005). *Contemporary Human Resource Management.* Jordan: Wael Publishing House.
10. Muflih, G. (1998). *Teaching Competencies That Primary School Teachers Need to Retrain in During Arabic Language Enhancement Courses.* Master's Thesis in Education, University of Damascus.
11. Slimani, F. Z. (2020). *Teaching Competencies in Primary Education: A Field Study in Tiaret Province (Vol. 12).* Al-Bahith Journal.
12. Al-Ghaziwat, M. I. (2005). *Evaluation of Teaching Competencies Among Faculty Members in Educational Sciences at Mutah University from the Perspective of Social Studies Students.* Journal of the College of Education, United Arab Emirates University.
13. Al-Shaib, M. S., & Bin Zahi, M. (2011). *A Review of the Concept of Teaching Competencies.* Ouargla: Journal of Humanities and Social Sciences, Kasdi Merbah University.
14. Abdul-Momani, M. O. (2019). *Teaching Competencies Among Vocational Education Teachers from Their Perspective: A Field Study in Ajloun, Jordan (Vol. 3).* Rawafid Journal.
15. Casse, P. (1949). *La Formation Performation.* Paris: Office de la Publication Université.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Reforming Public Financial Management in Algeria: Navigating the Transition from Bureaucratic Rationality to New Public Management within the Framework of Organic Law 18-15

Akhal Mohammed
Research Scholar
University of Batna 1
Algeria
Email: akhalameur@gmail.com

Issue web link	https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html
Keywords	Finance, reform, law, management, effectiveness, governance

Abstract

The process of reforming public financial management in Algeria raises the question of whether it is possible to overcome the imbalances inherent in the philosophical and reference framework, which has traditionally been grounded in a Weberian bureaucratic legal rationality adapted to the Algerian context. This reform seeks to shift toward a managerial rationality that embraces the concept of New Public Management, in pursuit of greater effectiveness in managing public affairs in general and public finances in particular. The legal framework governing this process underwent an attempt at reform, embodied in the adoption of Organic Law 18-15 concerning public finance laws. This law was passed as part of the implementation of public financial governance based on performance, effectiveness, economic criteria, and the rationalization of public spending.

The challenge of reconciling legal legitimacy with managerial effectiveness in managing public finances in Algeria is closely tied to the nature of the relationships among financial sector actors. This relationship reflects the continued dominance of the executive branch in financial decision-making, weak parliamentary performance, and the lack of effective influence from civil society institutions.

Citation. Akhal M. (2025). Reforming Public Financial Management in Algeria: Navigating the Transition from Bureaucratic Rationality to New Public Management within the Framework of Organic Law 18-15. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 700–714. https://doi.org/10.56352/sei/8.11.55

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 28.05.2025	Accepted: 30.07.2025	Published: 05.09.2025 (available online)

INTRODUCTION:

The reform of public financial management has become a widely accepted priority among politicians, economists, nations, and organizations, given its critical importance in the lives of individuals and societies. Effective management of public funds is increasingly seen as an imperative, driven by the scarcity of resources and rising social demands. As a result, countries are exploring the most effective methods and strategies to

achieve efficient public management and ensure optimal use of public expenditures. This is occurring within a global context where numerous nations are undertaking reforms to their financial systems. These reforms are guided by the concept of financial governance[1], as endorsed by international financial institutions. Financial governance is viewed as a model for effective management, based on results measured through precise indicators.

These indicators are primarily linked to the reform of public management and the transformation of public institutions to operate in ways similar to private companies. This implies that public administration and the state must follow the same rules and mechanisms that govern private enterprises. In doing so, they are subject to market logic, driven by the need for sound, transparent management[2] and a regulatory framework that defines the relationship between citizens and the administration in a more participatory manner, ensuring accountability, efficiency, and effectiveness. This shift is the key justification behind the reform of public financial management, transitioning from a model based on bureaucratic logic—dominant from independence until the early 1990s—to a managerial approach rooted in the principles and practices of New Public Management (NPM)[3].

In the context of public financial management reforms initiated in 2001[4]defining the philosophical and reference framework is essential to understanding the primary objectives of this transformation. The project aims to create a new philosophy of public administration management that prioritizes results, combining two distinct cultures: a democratic one based on the active role of elected representatives and a managerial one that grants greater autonomy to managers, enriched by the experiences of industrialized countries. The central challenge lies in reconciling the requirements of New Public Management with the principles of legal accountability. In other words, how can the law and public management be harmonized to lead the reform of Algeria's public financial management framework?

This paper aims to explore this transition between two fundamentally different approaches, each with its own philosophical and reference frameworks. It will begin by examining the framework of public financial management under the traditional bureaucratic legal model, before delving into the characteristics of the managerial approach[5]. This approach proposes a vision for overcoming the crisis in public financial management, moving towards a model that adopts the concept of governance in public financial management, seeking a balance between legal legitimacy and managerial effectiveness within the Algerian context.

The paper is divided into three main sections:

- Reforming Public Financial Management: Between Law and Public Management
- The Intersection of Legal and Managerial Concepts in the Search for Public Financial Governance in Algeria.
- Towards a New Paradigm in Public Financial Management: Effectiveness and Performance as the Core Framework

1-:REFORMING PUBLIC FINANCIAL MANAGEMENT: BETWEEN LAW AND PUBLIC MANAGEMENT

In light of the prevailing global trend among public administrations to enhance the effectiveness of public actions, several reforms have been implemented to improve public sector performance and the quality of services provided by public institutions. These reforms often involve adopting management approaches that emphasize rational management in public administration, moving away from the bureaucratic legal rationalism that defined the welfare state era. However, this shift has faced significant challenges, mainly in the form of strong resistance to abandoning the bureaucratic legal structure of public administration, even as there has been an attempt to incorporate managerial principles such as efficiency, effectiveness, and performance in managing public affairs. This situation reflects a conflict between legal rationality and new public management, with varying degrees of impact across different countries. Two primary perspectives shape this debate: the North American business management approach and the European public administration perspective, particularly the French model of public service. In this context, Algeria is one of the countries that aligns with the European perspective on public administration, while adding its own unique Algerian approach.

Law and public management represent distinct reference systems. The law focuses on regulating behavior and procedures, while management emphasizes the need for effectiveness, relying on performance and results. Thus," they form separate normative frameworks: one grounded in legal principles with inherent force, and the other in managerial principles, which are more practical, with the validity of their rules depending on the results they produce"[6]. However, the crisis in public management has necessitated the integration of public management principles and practices into the legal frameworks governing public administration, particularly in the area of public financial management

1.1- GOALS AND OBJECTIVES: FROM PUBLIC INTEREST TO THE PURSUIT OF EFFICIENCY

The issue of the relationship between law and public management arises first at the level of goals, and second, at the level of organizational methods, styles, and work practices, with a particular focus on the reality of public financial management in Algeria. This is due to the fact that each country has its own unique characteristics, shaped by its historical, cultural, economic, and political context.

1.1.1.- THE LEGAL FRAMEWORK OF PUBLIC MANAGEMENT

The philosophical and ethical framework for public management, viewed through the lens of legal rationality, is anchored in two foundational concepts[7]:

-The Public Interest: This concept serves as the central pillar around which the traditional model of public administration revolves. Public administration, as an entity distinct from the state, plays a crucial role in mediating and balancing competing social interests. Public management, therefore, is understood as the stewardship of the public interest and the exercise of public authority through governmental institutions.

-Public Service: The second cornerstone of traditional public management refers to the broad spectrum of activities for which the government assumes responsibility, both in terms of performance and oversight. This concept places the state at the core, granting it the authority to determine whether an activity aligns with the criteria for public service. Consequently, the notion of public service must inherently serve the public interest.

In this framework, the law provides legitimacy to administrative actions, forming a foundational equation between public authority, public service, and the public interest. However, this legitimizing mechanism has faced significant challenges, particularly as the distinctions between public and private systems have become more pronounced. The crisis in public management, under the traditional model, has prompted critiques aimed primarily at the law, which historically has been the core of bureaucratic regulation and a key function of state intervention[8]. In this context, "Governance proponents argue that the state is no longer the exclusive source of legal standards, that central regulation and control under the law has become impossible, and that official legitimacy is no longer capable of asserting itself as the sole form of social control and justice.".[9]

1.1.2 THE MANAGERIAL PERSPECTIVE ON PUBLIC FINANCIAL MANAGEMENT

Due to the shortcomings of traditional public financial management, the inability of the legally grounded approach to adapt to the transformations driven by globalization and the declining role of the state has come to the forefront. This has underscored the need to modernize public financial management practices, offering a renewed interpretation of the concept of the public interest. This shift involves incorporating public management principles into the core of public authority and public service, thereby reshaping the philosophical framework of public management from a legal standpoint.

The managerial approach to public financial management proposes the establishment of a new model grounded in the principles of the new political economy. This model critiques the traditional role of the state and its management, advocating for a managerial perspective that treats public procedures similarly to those of private service agencies, subject to identical standards. It critiques the overconcentration of resources within the public sector, champions privatization through outsourcing and market orientation, and emphasizes economic efficiency via cost-benefit analysis[10].. Consequently, this approach represents a comprehensive ideological shift, with new public management at its heart. It seeks to empower managers, aiming to enhance performance and achieve tangible results through an emphasis on concepts such as performance, efficiency, and economic effectiveness

-Performance: The term performance refers to the extent to which objectives are achieved and resources are used efficiently. It also represents the completion of tasks. "Performance is often presented as a cornerstone of managerial discourse, and in economic logic, the concept of performance relates to rationalization, focusing on economic performance in improving the effectiveness of public organizations, relying on evaluation models that adopt a positive relationship between managerial practices and performance indicators, including productivity and quality."[11].

-Effectiveness: The concept of effectiveness in the public sector, within the managerial approach, pertains to the alignment between established objectives and the outcomes attained. It is defined as the relationship between actual results and anticipated outcomes, typically measured by the deviation from the planned targets[12]. Effectiveness thus reflects the extent to which predetermined goals are successfully achieved

-Efficiency: In the managerial approach, efficiency is closely tied to maximizing value while minimizing costs. Public organizations aim to optimize the use of available resources to achieve their objectives, focusing on maximizing outputs, reducing expenses, and enhancing the relationship between inputs and outcomes. "Efficiency refers to the ability to accomplish a task with fewer resources, where an efficient activity is one that incurs the least possible cost."[13].

1.1.3. THE REALITY OF PUBLIC FINANCIAL MANAGEMENT IN ALGERIA

Public financial management in Algeria has historically followed a traditional, legally-driven bureaucratic model, with Law 84-17[14] serving as its foundational reference and guiding philosophy. This framework is rooted in two core principles: first, the public interest and the provision of public services; second, the legal structure of public administration, as outlined in administrative law and the shared system of public services; and third, a bureaucratic rationality and monopolistic system[15].

his approach is exemplified by its reliance on a Weberian legal model, marked by an imbalance of power between the executive and legislative branches in budget management. In this system, the executive exerts dominant control, creating a closed process for the preparation and execution of the state's general budget. The legislature focused on ensuring safeguards to protect public funds from embezzlement, fraud, and waste. However, despite the proliferation of laws and regulations designed to achieve these goals, they have not delivered the intended results[16]. Additionally, the public accounting system suffered from a lack of clarity and transparency, prioritizing procedural correctness over tangible outcomes that would ensure effective public spending[17].

As a result, the system became dominated by a means-oriented logic, focused on securing larger budget allocations without scrutinizing the relevance or substance of the tasks, objectives, or expected outcomes. This disconnect is evident in the budgetary frameworks and the structure of public expenditures, which fail to meet the economic needs necessary for efficient and impactful public financial management. In response to the multifaceted crises of the late 20th century, including challenges in public financial management, Algeria, like many developing nations, sought to implement reforms. Under pressure from international financial institutions, the country adopted a more managerial approach, aiming to merge elements of both traditional and modern frameworks. This shift introduced performance-based concepts, effectiveness, and results, while striving to uphold the principles of public interest and the provision of public services.

2- THE CONVERGENCE OF LEGAL AND MANAGERIAL CONCEPTS IN THE PURSUIT OF PUBLIC FINANCIAL GOVERNANCE IN ALGERIA

Efforts to transition public financial management in Algeria toward a managerial approach[18], moving beyond the traditional bureaucratic legal framework, have raised critical questions regarding the relationship between the principles of New Public Management (NPM) and the foundational reference and philosophical framework of public management, which is grounded in public authority, the public interest, and public service.

2.1- THE EVOLVING REFERENCE AND PHILOSOPHICAL FRAMEWORK OF PUBLIC MANAGEMENT IN ALGERIA

The concept of public authority is inherently linked to the dominance of the state, which stands as the sole source of law, bearing the exclusive responsibility for issuing binding regulations and ensuring compliance through coercive means. The law, in this context, reflects the state's core power, with administrative law governing public management and imbuing it with the essence of public authority[19]. "Public authority has been central to the roles the state plays, aimed at achieving economic growth and political stability. However, the performance of the public sector, marked by its authoritarian nature, has often been underwhelming, particularly following the failure of traditional public service management."[20].

The inability of public institutions to deliver satisfactory services to citizens, coupled with the growing budget deficits needed to finance these services, has highlighted the crisis in public management. This crisis has led to calls for reform, with initiatives focused on overcoming these challenges and driving state-led transformation.[21].

2.1.1 THE CRISIS OF PUBLIC FINANCIAL MANAGEMENT

In an effort to address the ongoing crisis, there have been attempts to transfer principles from private sector management to public administration, reflecting a desire to enhance effectiveness and to base the legitimacy of administrative processes on the measurable success of their outcomes. In this context, the traditional power of the sovereign state is no longer the primary justification for administrative intervention. Instead, the focus has shifted to the ability of public authority to align declared objectives with actual results. While private sector management focuses on productivity and profit, public management aims to achieve performance with the ultimate goal of improving public service delivery.

Public service serves as the third ethical and philosophical reference point upon which public management in Algeria is grounded. It has become the central, unifying principle for all public interventions, as "public management exists solely within the boundaries of public service and for the benefit of public service." [22] In the context of reform policies, particularly following the 1988 changes, the legislator sought to challenge the dominance of the public sector by enacting the Guiding Law for Public Economic Enterprises[23]. This law addressed the debate about whether public services and the public sector could be reconciled within a "socialist state," acknowledging that while there are shared elements, they do not possess identical scope nor function as a unified entity[24].

Moreover, the concept of public service is intricately tied to the realization of the public interest, which justifies its existence and operational framework. It forms a key element of the philosophical and reference framework for public management in Algeria, encompassing all aspects of economic and social activities provided by the state[25]. As such, the concept of public service is dynamic, evolving, and comprehensive, as it reflects the dominant philosophical ideologies of any given era and context. This flexibility in the concept has allowed it to adapt over time and in different locations, including in Algeria[26].

However, this flexibility has not been without criticism. The administration has frequently invoked the public interest to legitimize its actions and secure the support of citizens. Yet, given the persistent failure of public administration to effectively manage public affairs, the very notion of the public interest has come under scrutiny.

2.1.2 FROM LEGAL COMPLIANCE TO THE PURSUIT OF PERFORMANCE AND RESULTS

The failure of public management in Algeria to achieve its intended objectives, due to a variety of factors, prompted the adoption of structural reforms driven by both internal motivations and external pressures from financial institutions. These reforms led to the significant privatization of parts of the public sector, distancing them from the traditional notions of public service and the public interest. The attempt to implement New Public Management (NPM) principles contributed to a shift in the legitimacy of public administration and public financial management, transitioning from a formal, externally derived legitimacy rooted in legal-political frameworks to a legitimacy based on performance outcomes. This new form of legitimacy is defined by the results achieved and the ability of administrators to effectively manage resources in order to optimize the relationship between expenditures and objectives[27].

This shift highlights how the traditional bureaucratic and legal regulatory framework for managing public finances has become outdated, unable to adapt to both internal reforms and external pressures. Core principles such as public interest and public service now face legitimacy challenges, particularly as demands for measurable results take precedence. Public action is increasingly evaluated based on tangible outcomes rather than abstract ideals of service.

Moreover, several criticisms have emerged regarding the concept of public service within the context of the transition to NPM principles. While public service once provided an ethical foundation for governance, it often led to management characterized by idealism and exaggeration. The inefficacy and poor performance of public administration in Algeria revealed that this ideal, promoted during the welfare state era, had become more of a legitimizing myth than a practical framework for governance[28]. As the limitations of this concept have become more apparent, there has been a growing demand for reforms centered on effectiveness, performance, and results. This shift reflects the pressing need to modernize public sector management, incorporating private sector management practices such as contracting, in order to achieve more effective governance and deliver tangible results.

3-TOWARDS A NEW PARADIGM IN PUBLIC FINANCIAL MANAGEMENT: EFFECTIVENESS AND PERFORMANCE AS THE CORE FRAMEWORK

The multidimensional crisis that Algeria faced at the end of the 1980s prompted a search for solutions through a series of internally-driven reforms and numerous externally-imposed measures. The primary objective of these reforms was to restructure the state through more rational public management, focusing on optimizing public spending and improving the mechanisms for allocating public funds. Achieving these goals became a central priority for policymakers, economists, legal experts, and managers across both the public and private sectors, as it was intrinsically linked to the choices of society and the well-being of future generations.

In this context, reforming the legal framework for public financial management became imperative. This reform process included revisiting key laws governing financial and budgetary management[29], such as the 84-17 Framework Law on public finance laws. These laws had become increasingly outdated, failing to reflect the evolving economic, financial, and social realities of the country, as well as the international shifts in public financial management practices.

3.1.1 THE ORGANIC LAW 18-15 ON PUBLIC FINANCE LAWS AS A MECHANISM FOR MODERNIZING PUBLIC MANAGEMENT

The primary objective behind the enactment of Organic Law 18-15[30], concerning public finance laws, was not only to align it with the constitutional framework[31] but also to implement significant reforms in public financial management. This reform is part of a broader global trend aimed at modernizing public finance systems, which began in the Organization for Economic Co-operation and Development (OECD) countries and has since spread worldwide. Key examples of such reforms include France's adoption of the Organic Law on Public Finance (LOLF) in 2001, effective in 2006; Morocco's Regulatory Law 130.13 in 2013, implemented in 2015; and Tunisia's Budgetary Framework Law in 2019[32].

This international context underscores the global momentum toward reforms in public finance management, driven by the need for measurable results and improved performance, with the ultimate goal of ensuring the effectiveness of public spending.

Organic Law No 18-15 outlines the general framework within which public finance laws are structured, along with the processes involved in their preparation, approval, and execution[33]. It sets the management framework for the state's finances and establishes the principles and regulations governing public finance, state accounts, and oversight mechanisms.

Through this law, the legislator sought to bring about a fundamental shift in the approach to public finance laws. Moving away from the previous expenditure-based budgeting approach defined by Law 84-17,

Organic Law 18-15 introduces a focus on performance-based budgeting. The aim is to direct the budget towards achieving specific, measurable outcomes based on clearly defined objectives.

The primary goals of Organic Law 18-15 are

- Reforming the Public Management Framework with a Focus on Results

Improving public financial management, ensuring its effectiveness, and controlling public spending have driven governments worldwide to adopt methods for managing their budgets based on principles commonly used in the private sector, particularly through the use of performance indicators to guide revenues and expenditures.

In this context, Article 2 of Organic Law No 18-15 mandates the adoption of a results-oriented management approach, beginning with clear and specific objectives aligned with the goals of the public interest. These objectives are subject to evaluation[34], ensuring that public expenditure is directly linked to achieving results. This approach shifts public spending from a means-based logic, as outlined in Law 84-17, to an outcome-focused approach. The aim is to enhance the effectiveness and performance of public policies while improving the quality of public services provided to citizens.

This new approach, grounded in an economic perspective, will also reinforce the role of the finance law as a key tool for implementing public policy. It aims to improve alignment between sectoral strategies while maintaining the financial balance of the state. This will be achieved through the adoption of an annual medium-term budget framework, which can be reviewed by the government during the preparation of the finance law each year[35].

This medium-term framework allows for the comparison of financial indicators with the standard benchmarks set out in the government's approved plan, helping to identify areas of success or failure for each program by comparing, measuring, and evaluating results

- Enhancing Transparency in Budgetary Information

Enhancing financial transparency is a fundamental component of effective public finance management and accountability. This focus is increasingly emphasized by international financial institutions, which stress the importance of continuously improving frameworks and guidelines that support financial transparency. In particular, public financial transparency—especially regarding the budget—is intricately linked to the availability, reliability, and accessibility of information related to various types of expenditures and revenues. This includes ensuring the timely dissemination of accurate data to all relevant stakeholders[36].

In this context, Organic Law No 18-15 was introduced to facilitate greater transparency by requiring the provision of various reports and explanatory annexes. These reports enable members of parliament, as representatives of the people, to actively participate in the financial decision-making process, as well as in the monitoring and execution of public finance policies. This requirement is addressed in Articles 72, 75, 76, and 87 of the law.

The law mandates that the government submit several reports at different stages of the annual finance law's preparation, enactment, and execution. This demonstrates the legislator's commitment to making a substantial amount of information accessible to the public and ensuring the involvement of non-governmental actors in the decision-making process. It also reinforces the oversight and accountability of public officials in managing public funds, ensuring that the expected outcomes outlined in the government's action plan are met.

As part of reinforcing the principle of financial transparency, the finance laws themselves govern provisions that directly affect the state's financial resources and obligations[37]. Furthermore, in its first subsection, Organic Law No 18-15 addresses budgetary authorizations in Article 23, specifically stipulating in its third paragraph that any amendments to budget allocations must follow the conditions prescribed by law. This ensures that financial adjustments are made transparently and in strict adherence to the established legal framework.

3.1.2. REFORM GRANTING GREATER MANAGERIAL AUTONOMY WITH ENHANCED PERFORMANCE MONITORING

Organic Law No 18-15 grants manager's greater flexibility in managing public finances by enabling them to make transfers and adjustments to budget allocations within defined procedures. This approach ensures that the intended goals for each program are not fundamentally compromised while maintaining the necessary oversight and accountability.

Article 33 of the law outlines the process for making financial transfers or reallocations during the fiscal year, particularly for adjusting the initial distribution of program allocations. The process is as follows:

- **Transfers within the same ministry or public institution**: These can be made via a decree, based on a joint report from the Minister of Finance and the relevant Minister or public institution.
- **Transfers between ministries or public institutions**: These require presidential decrees, supported by joint reports from the Minister of Finance and the relevant Ministers or public institutions.

The law also mandates that such transfers or reallocations must be communicated to Parliament. Notably, the total amount of transfers or reallocations, carried out through decrees within a given year, cannot exceed 20% of the initial financial allocations for each program[38].

Furthermore, Law 18-15 allows for the carryover of available payment appropriations from one year to the next, but only under exceptional and justified circumstances. This can occur before the end of the supplementary period (by January 31 of the following year). Similarly, payments for investment expenditures in any program can be transferred to the same program, but such transfers cannot exceed 5% of the initial allocation. These transfers are made through a joint decision between the Minister of Finance and the Minister responsible for the concerned sector, as long as they do not disrupt the overall budgetary and financial balance.[39]

While the law provides flexibility in reallocating funds, it also emphasizes that programs must be tied to specific, measurable objectives for which managers are held accountable. These objectives are accompanied by quantitative indicators that assess the effectiveness of public spending and the achievement of these goals.

In line with the law's focus on results-based management, managers are required to report on actual outcomes and are subject to performance monitoring based on clearly defined performance indicators[40]. This ensures that the effectiveness of public spending becomes a central objective, with continuous assessment and reporting on progress[41].

Additionally, the budget settlement law mandates a ministerial performance report, which outlines the circumstances under which programs were executed and evaluates the extent to which their objectives were met. The monitoring and evaluation of these objectives are carried out using relevant performance indicators[42].

To further enhance results-based budget management, the law provides for the option to finance public investment projects through contracting or partnerships with private or public entities, either fully or partially. These arrangements must align with medium-term spending frameworks and sectoral programs, ensuring that such collaborations are consistent with broader fiscal policies[43].

3.3.3. THE EFFECTS OF ADOPTING THE MANAGERIAL APPROACH IN PUBLIC FINANCIAL MANAGEMENT

The adoption of Organic Law No. 18-15 on public finance laws is a key component of the structural reforms initiated by Algeria in 2001. These reforms aim to establish the foundations of good governance and align with constitutional provisions regarding public financial management[44]. They are also designed to keep pace with global transformations, particularly the growing trend toward adopting a results-based approach. Through this law, the framers sought to adapt the roles of stakeholders in public financial management to this new, economically-driven approach, which offers an expanded perspective on public finance and budgetary law.

The managerial approach embedded in the law introduces a new model of financial management, characterized by the following key elements:

- **Program-based management**: Programs are treated as distinct entities to be actively managed.

- **Managerial responsibility**: Similar to the private sector, managers are held accountable for their decisions and actions.
- **Accounting and performance indicators**: These mechanisms align with private sector practices and focus on economic principles such as transparency, efficiency, and accountability.

This model moves beyond traditional financial techniques and embraces an economic vision aimed at improving public financial management by ensuring transparency, efficiency, and accountability. The shift represents a significant change in the role of the state, transitioning from a traditional regulatory and controlling function to a more strategic and participatory role in decision-making. This shift also promotes institutional capacity building and policy evaluation. Ultimately, the goal is to achieve greater efficiency and tangible results in public financial management, moving away from the legalistic and technical approach that has historically been prone to inefficiency and corruption in managing public funds.

2.3.2.1. The Need to Adapt the State's Role

As the public financial management system undergoes reform, the state must adapt to new responsibilities and an evolving role. This shift involves moving from being the primary actor to collaborating with other stakeholders in a more interactive and cooperative environment. This change is driven by the global trend toward adopting New Public Management (NPM) principles and a more managerial approach, significantly shaped by neoliberal theory, which blurs the traditional distinction between the public and private sectors.

In this new paradigm, the state is expected to balance public sector goals with management practices commonly found in the private sector when addressing economic and financial challenges. The state is now treated as an economic actor, subject to the same conditions and principles that govern other entities. This means that performance measures and evaluations are now integral, with the state required to compare its resources to the expected outcomes, ensuring efficiency and effectiveness in public financial management[45].

Thus, the state's intervention in the economy must be economically justified, with a clear social rationale following it. The Organic Financial Law introduces mechanisms to align state interventions with public policies and the responsibilities of public authorities. These include implementing program-based budgeting and holding program managers accountable for their execution[46].

The process of public policy evaluation has gained increasing attention, particularly in light of new perspectives on the state's role in public administration. This shift is notably reflected in the rise of participatory approaches and the growing adoption of results-oriented management practices. In essence, public policies encompass everything "the government does or does not do."[47] The concept first emerged in the United States, driven by the need to justify public expenditure and lend legitimacy to public actions by ensuring their contribution to the development of effective policies, especially in the context of scarce resources.

2.3.2.2 Adoption of Public Policy Evaluation

The adoption of a results-based management approach compels actors in public financial management—operating within a complex and dynamic society—to implement new mechanisms designed and oriented toward achieving tangible outcomes. In this context, we are witnessing a shift in the legal domain toward an evaluation-based approach, which initially emerged as a tool to measure the effectiveness of public policies. This shift is reflected in the development of evaluation methods aimed at assessing not only the impact of legal norms but also their broader social effects[48]. Consequently, evaluation becomes a key instrument in aligning legal frameworks with the principles of good governance, promoting core elements of New Public Management such as transparency, efficiency, performance, and adaptability—all focused on delivering measurable public policy results[49].

Moreover, public policy evaluation enables a more accurate assessment of increasingly complex policies, balancing the drive for results with the imperative to maintain the democratic character of public action. This is achieved by equipping citizens with the information they need to evaluate the functioning of public services and the delivery of public goods.

Organic Law No 18-15 seeks to strengthen Parliament's role in the debate over the Finance Law by enhancing the quality and reliability of information provided by the government, revising the timeline for

drafting finance laws, and modifying the process for voting on budget expenditures. This initiative aligns with the broader transition toward results-based management, moving from an input-focused budget to one centered on outcomes. Such a transformation will directly reshape the presentation of the Finance Law by fostering greater transparency, introducing a new expenditure classification system, updating and simplifying budget documents, and ensuring these are accessible to key financial stakeholders—particularly Parliament and civil society[50].

- **Participation and Informing Public Financial Stakeholders**

The concept of participation refers to the active and meaningful involvement of citizens in all aspects of societal life—economic, social, and political—aimed at advancing the public interest.

In the financial sphere, participation in the budgetary process signifies that citizens hold a political responsibility, which includes the right to shape their collective future by influencing budget allocation decisions and setting priorities for public spending policies that directly impact their lives and living conditions. Given the centrality of the budget process within the broader political governance system, citizen engagement plays a critical role in shaping the content and direction of financial governance[51].

Amid the ongoing crisis of representative democracy, participatory democracy has emerged as a viable alternative to address the legitimacy deficit of traditional institutions. This alternative introduces the principles of citizen involvement and participatory budgeting as mechanisms for reform. It promotes a model of public financial management that places citizens' needs and preferences at the center of government decision-making. International experiences have demonstrated that civil society often possesses a stronger capacity to identify public priorities and a deeper understanding of the trade-offs confronting policymakers. This has led to growing interest in involving civil society in the budgeting process—a dynamic referred to by Leroy Marc as financialdemocracy[52].

However, the introduction and subsequent adoption of Organic Law 18-15, concerning finance laws, occurred without meaningful engagement from key stakeholders—particularly civil society, Parliament, and the political opposition. This lack of a participatory approach risks undermining the law's effectiveness and public acceptance, especially given its broader implications beyond financial regulation, extending to societal choices and the future of upcoming generations. In this regard, citizen participation in the budget process is not merely a procedural formality but a cornerstone for building legitimate and effective financial governance[53].

Ultimately, the successful adoption of results-based management in Algeria's public financial administration remains contingent on the institutionalization of public policy and financial evaluation.

- **Strengthening Parliament's Evaluative Role in Public Policies under Law 18-15**

Parliament plays a crucial role in shaping public policies through legislation, oversight, and advocating for citizen participation in decisions related to public policy. This process includes the monitoring and evaluation of these policies. With the adoption of a results-based management approach by lawmakers, it is essential for Parliament to evolve from merely overseeing public policies to actively evaluating their effectiveness[54].

Organic Law 18-15 captures this shift by introducing a new mechanism for allocating financial resources—through programs that are divided into sub-programs and activities, each with specific objectives and indicators. Consequently, the new Finance Law will make public actions subject to thorough evaluation[55].

Budget systems based on results help institutionalize and expand evaluation frameworks. As Jean-Pierre Camby aptly states, "It's not just about authorizing or approving expenditures and overseeing them; it's about determining the means in relation to the priorities of public action and, ultimately, evaluating them."[56]

This approach is reflected in the legislator's adoption of programs and their sub-components, which are central to the implementation of specific public policies and serve as units for the allocation of financial resources. As such, the Finance Law becomes the foundational tool for evaluating public policies. This evaluation process is reflected in the ministerial performance report, which will be attached annually to the draft budget settlement law[57].

The purpose of public policy evaluation is to enhance the value of the policy outcomes (the results) being assessed (the program) through a rigorous, credible methodology based on reliable indicators[58] In this

regard, the legislator has ensured that program evaluations will be carried out through the assessment of ministerial performance reports, measuring the achievement of expected objectives, as tracked by performance indicators.

The reality of Parliament's role in Algeria highlights challenges, including weak legislative output and limited oversight, particularly in the financial sector. These issues stem from the structure of the parliamentary body and its relationship with other branches of government[59] As a result, Parliament has become more of a chamber for approval, with the executive branch dominating the financial realm due to its superior expertise and capacity compared to the legislative body[60].

- **Enhancing the Evaluative Role of the court of account**

Through Organic Law No 18-15, the legislator sought to establish a framework for public financial management grounded in results-oriented principles[61]. The certification of state accounts aims to promote management accountability by subjecting state accounts to external audits, similar to the certification of corporate accounts. As a result, the Court of Auditors must transition from merely overseeing compliance to evaluating the effectiveness and efficiency of public actions. It will assess performance based on tasks and programs, the primary units for allocating financial resources. In addition, the Court will support and assist Parliament in exercising oversight over the implementation of the Finance Law and extend its advisory role in evaluating public financial matters.

This approach presents both a challenge and a significant opportunity for the Algerian administration, as only a few countries globally subject their public accounts to certification by an external auditing body. Furthermore, the legal framework governing the Algerian Court of Auditors under the current law does not fully align with international standards for supreme audit institutions, particularly those set by the International Organization of Supreme Audit Institutions (INTOSAI) concerning constitutional norms for external oversight[62].

Organic Law No 18-15 ensures the availability of methods through which the court of account can assist Parliament in overseeing state financial affairs or other public financial matters. The President of the National People's Assembly or the President of the Council of the Nation may request the Court to review files of national significance. Additionally, the law mandates the Court to attach two reports to the draft budget settlement law: the first, detailing the results of the Finance Law's implementation for the relevant year, with a particular focus on the management of allocated resources and the execution of programs. The second report addresses the certification of state accounts in line with standards of regularity, integrity, and accuracy, accompanied by a report on the investigations conducted by the Court to fulfill this task[63].

Despite these provisions, the evaluative role of the Court of account has yet to meet its full potential, with actual outcomes falling short of expectations. This is primarily due to the non-binding nature of its opinions and recommendations, which limits their impact on policy and governance[64].

CONCLUSION:

Performance, effectiveness, economy, and resource rationalization are key characteristics that define financial governance. This framework began taking shape in Algeria as part of the broader public financial management reform efforts starting in 2001. After nearly two decades of attempts to enhance efficiency in managing public funds and rationalizing spending—particularly given the limited resources primarily sourced from oil revenues, which are subject to global market fluctuations—the Algerian public administration began to shift.

Historically, public management in Algeria followed a bureaucratic, legally rational system, modeled on Max Weber's approach but adapted to the Algerian context. However, with pressures from globalization and the crisis of the welfare state, the Algerian legislature sought to adopt the concept of New Public Management (NPM), aiming for a more results-oriented approach to public administration, especially in financial management. This shift was reflected in the adoption of Organic Law No. 18-15, which sought to reform the legal framework of public financial management.

Key Developments:

- Organic Law N° 18-15 was introduced to shift the public financial decision-making process from a legalistic to an economic approach, emphasizing results-oriented management.
- The implementation of Law 18-15, however, faces significant challenges. One major issue is the lack of participatory involvement in its drafting, which has undermined its legitimacy and limited its acceptance among key stakeholders. The law was largely shaped in response to the conditionalities of international financial institutions and draws heavily from the French model of financial reform.
- Another challenge in activating Law 18-15 is the difficulty in applying results-oriented management logic, reducing it to a set of techniques that only reinforce the executive's continued dominance over financial decision-making. This, combined with Parliament's inability to reclaim its financial powers and a civil society still driven by rent-seeking behavior, further impedes progress.
- Given that the law's application began only in 2023, it is still too early to assess whether it has successfully reconciled legal legitimacy with managerial effectiveness. However, initial signs suggest that the participatory aspects are lacking, and the executive branch continues to dominate financial decision-making.

Proposed Solutions:

To address these issues and improve the functioning of public financial management, we recommend the following steps:

- **Enhance the Evaluation of Public Policies and Financial Management:** Strengthening the evaluation process will help legitimize public financial management by allowing citizens to understand how public funds are allocated and spent, as well as hold officials accountable. The results-oriented management techniques offer precise data that can improve auditing and performance oversight.
- **Institutionalize Evaluation Processes:** Evaluation should not only serve as an audit to identify flaws but also measure progress toward achieving public policy goals. It should assess whether the intended results of policies—both internal and external—have been met, providing a more comprehensive view of their effectiveness.
- **Good Governance over Petroleum Revenues:** Effective public financial management must prioritize the management of petroleum tax revenues, applying a results-oriented approach that respects the public interest and social justice. This is especially important given the need to protect the rights of future generations, as guaranteed in the constitutional preamble.
- **Balance Legal Legitimacy with Managerial Effectiveness:** The public financial management model should strive to integrate legal legitimacy with managerial effectiveness, balancing legality, equality, and justice with efficiency, performance, and results. The ultimate goal is to serve the public interest.
- **Leverage Advisory Bodies:** Expertise from advisory bodies such as the **Economic and Social Council**, the **Court of account,** and the **Research Center for Applied Development** should be harnessed to support forecasting, evaluation, and policy formulation in public financial management.
- **Mandate Response to Court of account' Reports:** A legal obligation should be imposed on all authorities to respond to the **Court of account** reports within a specified timeframe. Publishing these reports will enhance transparency, and granting judges functional and institutional independence will enable them to perform their duties effectively.
- **Prioritize Education in Public Financial Management:** There is a critical need to give greater emphasis to teaching public financial management and related disciplines. These fields play a vital role in promoting transparency, accountability, and good governance.

Future Steps:

To ensure the success of these recommendations, it is essential to conduct a study analyzing the sub-indicators of financial governance and assess their actual implementation following the adoption of Organic Law No. 18-15. This study should focus on the 2023 Budget Settlement Law, presented to Parliament, as the

primary tool for evaluating whether the expectations outlined in the finance law align with the actual results and the fulfillment of the goals set for the year.

Acknowledgment

The author would like to express sincere gratitude to colleagues from the University of Batna 1 and the Algerian public finance research community for their constructive feedback and insights. Special thanks are also extended to the anonymous reviewers whose valuable comments greatly improved the quality of this manuscript.

Conflict of Interest

The author declares no conflict of interest related to this study.

References

Books

1. Bouvier, M. (2006). *Innovations in public finance and the reinvention of the state*. In M. Bouvier (Ed.), *Innovations, creations and transformations in public finance: Proceedings of the GERFIP Spring University of Public Finance* (pp. xx–xx). LGDJ.
2. Bousmah, M. L. (1995). *Public utilities in Algeria* (R. Ben Amar & R. Moulay Idris, Trans.). Office of University Publications.
3. Danedni, Y. (2014). *Public finance* (2nd ed.). Dar Al-Khaldouniya.
4. Fubbs, J. (1999). *The budget process and good governance*. African European Institute.
5. Harakat, M. (1992). *The law of higher control of public finances*. Babel Editions.
6. Jumaa, S. S., et al. (2001). *Managing state and society affairs*. Center for Public Administration Studies and Consultations.
7. Saeed Bou Al-Shaer. (2013). *The Algerian political system: An analytical study of the nature of the governing system in light of the 1996 Constitution* (Part 3, 2nd ed.). Office of University Publications.

University Theses

1. Atreya, B. (2002). *The applicability of New Public Management to developing countries: A case from Nepal* (Doctoral dissertation, Victoria University of Technology, Melbourne, Australia). School of Management, Faculty of Business and Law.
2. Ben Saeed, M. (2003). *Management rationality in Algerian administration* (Master's thesis, University of Batna). Faculty of Law and Political Science.
3. Cerurfa, A. (2016). *Budgetary reform in Algeria: In search of a model* (Doctoral dissertation, Sorbonne Law School, Paris 1).
4. Danan, R. (2015). *Rationalization of public spending policy within budget policy in light of international changes: A case study of Algeria (1990–2014)* (Doctoral dissertation, University of Algiers 3).
5. Dahmouch, F. (2015). *Privileges of public authority and non-public entities* (Doctoral dissertation, University of Algiers 1). Faculty of Law Youssef Ben Khedda.
6. Tsabet, A. R. (2015). *Evaluation of public policies in Algeria: A sectoral approach* (Doctoral dissertation, Mustapha Stambouli University, Mascara).

Journal Articles

1. Akhal, M. (2022). The financial powers of the Algerian Parliament under the constitutional amendment 2020. *Numerus Academic Journal, 3*(1), xx–xx.
2. Ashour, T. (2012). The New Public Management approach as a mechanism to support and enhance the competitiveness and efficiency of government organizations. *Algerian Institutional Performance Journal, 1*(1), 109–126.

3. Ben Saeed, M. (2015). Public management in Algeria: Reform or reinvention. *Economic Studies Journal, 6*(1), xx–xx.
4. Mabrouk, N. A. M. (2015). Transparency of the state's general budget: Its importance and mechanisms for enhancing it. *Faculty of Sharia and Law, Al-Azhar University, Tanta, Egypt*.
5. Suwaini, A. M. (2016). The challenge of efficiency in public finance management in Morocco: A reading of the philosophy of Organic Finance Law No. 130.13. *Research Journal of Humanities and Social Sciences, (5)*, xx–xx.
6. Al-Dawi, S. (2009). Analysis of the theoretical foundations of the concept of performance. *Al-Baheth Journal, (7)*, xx–xx.

Conference Proceedings / Forum Works

1. Bourguiba, S. (2010, June 9). Distinguishing between efficiency, effectiveness, and performance. Paper presented at the Wednesday Scientific Dialogue, King Abdulaziz University.
2. Pech, L. (2004). *Law & governance: Towards a privatization of law*. Canada Research Chair in Modeling, Citizenship and Democracy.
3. Vignon, J. (2000, December 16). Lessons from public action reforms in Europe. In *State and public management: Proceedings of the conference of December 16, 1999* (pp. xx–xx). La Documentation Française.

CITATIONS:

[1] Salwa Shaarawy Jumaa and others, Managing State and Community Affairs, Center for Public Administration Studies and Consultations, Cairo, First Edition, 2001, p. 8. In Arabic

[2]Michel Bouvier, innovations en finances publiques et réinvention de l'état dans: Innovations, Créations Et Transformations En Finances Publiques, Actes De La Lie Université De Printemps De Finances Publiques Du GERFIP - Sous La Direction De Michel Bouvier, LGDJ, Paris, 2006. pp3 -4

[3] Jacques Chevallier, Management public et Droit, revue politiques et management public, France, Vol.26/3, 2008, P97.

[4] Presidential Decree N° 01-140 of 6/06/2001 Including the loan agreement signed on April 18, 2001, between the People's Democratic Republic of Algeria and the International Bank for Reconstruction and Development to finance the project to modernize budgetary systems, Official Journal of the Algerian Republic (O.J.A.) N°, issued on 6/06/2001

[5] Tariq Ashour, The New Public Management Approach as a Mechanism to Support and Enhance the Competitiveness and Efficiency of Government Organizations, Algerian Institutional Performance Journal, Volume 1, Issue 1, Pages 109-126, 2012, p. 110. (In Arabic).

[6] Jacques Chevallier, op.cit., P94.

[7] Murad Bin Saeed, Public Management in Algeria: Reform or Reinvention, Economic Studies Journal, Volume 6, Issue 1, 2015, p. 46

[8]due to the public management crisis, characterized by the ineffectiveness and inefficiency of public organizations, the concept of the new public management, under the name of 'New Financial Governance,' was introduced as an approach to reforming public financial management in particular and public administration in general.

[9] Laurent Pech, Law and Governance: Towards a Privatization of Law, Canada Research Chair in Modeling, Citizenship and Democracy, Date viewed 10/04/2024 at 22:10 On the link https://depot.erudit.org/dspace/bitstream/002271dd/1/document-2004-02-pech-2.pdf

[10]VIGNON, Jérôme, Leçons des réformes de l'action publique en Europe, dans : Etat et gestion publique, Actes du colloque du 16décembre 1999, réalisé en PAO au Conseil d'Analyses Economiques, La documentation française, Paris, 2000, p22

[11] Saulquin J., Schier G., Responsabilité sociale des entreprises et performance: Complémentarité ou substituabilité ? revue des Sciences de gestion, France, N°223, 2007, p 61

[12] Shawqi Bourguiba, The Distinction Between Efficiency, Effectiveness, and Performance, a research paper presented as part of the Wednesday Scientific Dialogue, King Abdulaziz University, 06-09-2010, p. 4. (In Arabic).

[13] Sheikh Al-Dawi, Analysis of the Theoretical Foundations of the Concept of Performance, Al-Baheth Magazine, Issue 07/2009-2010, p. 220. (In Arabic).

[14] Law N°. 84-17 of 07/07/1984 relating to financial laws, (O.J.A.) N°28 of 10/07/1984, as amended and supplemented

[15]Murad Bin Saeed, Managerial Rationality in Algerian Administration, Master's Thesis, Faculty of Law and Political Science, University of Batna, 2003/2004, p. 88. (In Arabic).

[16] Abdelhak Cerurfa, la réforme budgétaire en Algérie : à la recherche d'un modèle, thèse de doctorat en sciences juridiques, école doctorale de droit de la Sorbonne, paris 1, 2016, p43.

[17] Radhia Danan, Rationalization of Public Spending Policy within Budget Policy in Light of International Changes, Case Study of Algeria (1990/2014), PhD Thesis, University of Algiers 3, 2015-2016, p. 241

[18]Marius Petrescu et al, " Public Management: between the Traditional and New Model". Review of International Comparative Management, Volume 11, Issue 3, July 2010, p. 412

[19] This was reflected in several legal texts, including Framework Law N°84-17 relating to financial laws, Order N°74-71 dated 11/16/1971, Law 78-12 relating to the general basic law for workers, dated 05-08-1978, Law N° 84-16 of 06-30-1984, relating to national property, Decree N° 82-145 of 10-04-1982 regulating contracts concluded by public operators.
[20] Dahmouch Faiza, Privileges of Public Authority and Non-Public Bodies, PhD Thesis in Public Law, University of Algiers 1, 2015-2016, p. 92
[21] The experiment undertaken by many countries through reforming public finance management as a gateway to state reform is what France did by adopting the Organic Law on Financial Laws (LOLF) in 2001. Implementation began in 2006 and is considered the "financial constitution of the state" and a lever for state reform in general.
[22] Murad Bin Saeed, Public Management in Algeria: Reform or Reinvention, Previously cited reference, p. 47. (In Arabic
[23] Law N°88-01 of 01-12-1988 containing the guiding law for public economic institutions, (O.J.A.) N° 31 of 01-13-1988.
[24] Mohamed Lamine Bousmah, The Public Utilities in Algeria, translated by Rahal Bin Amar and Rahal Moulay Idris, Office of University Publications, Ben Aknoun, Algeria, 1995, p. 53. (In Arabic
[25] Murad Bin Saeed, Public Management in Algeria: Reform or Reinvention, Previously cited reference, p. 47.
[26] Mohamed Lamine Bousmah Previously cited reference, p.03.
[27] Murad Bin Saeed, Public Management in Algeria: Reform or Reinvention, Previously cited reference, p. 47.
[28] The same reference, p 48.
[29] Yahya Danedni, Public Finance, Second Edition, Dar Al-Khaldouniya, Algeria, 2014, pp. 49 -52
[30] Organic Law N°18-15 of 02-09-2018 containing the Finance Laws, (O.J.A.) N°. 53 issued on 02-09-2018, amended and supplemented by Organic Law 19-09 of 11-12-2019, (O.J.A.)N°78 issued on 18-12-2019.
[31] Constitution of the Algerian Republic, amended by Presidential Decree No. 20-442 dated 12/30/2020, (O.J.A.) N°82, issued on 12/30/2020
[32] Organic Law N° 15 of 2019 dated 13/02/ 2019, relating to the Basic Law of the Budget of the Republic of Tunisia.
[33] Article 1 of Organic Law N°18-15.
[34] Article 2 of Organic Law N°18-15.
[35] Article 5 of Organic Law N°18-15.
[36] Nazih Abdel Maqsoud Mohamed Mabrouk, Transparency of the State Budget, Its Importance and Mechanisms for Enhancing It, Faculty of Sharia and Law, Tanta, Al-Azhar University, Egypt, 2015, p. 752. (In Arabic).
[37] Article 18 of Organic Law N°18 -15.
[38] Article 33 of Organic Law N°18-15.
[39] Article 36 of Organic Law N°18-15.
[40] Article 75 of Organic Law N°18-15.
[41] Article 02 of Organic Law N°18-15.
[42] Article 87 of Organic Law N°18-15.
[43] Article 37 of Organic Law N°18-15.
[44] Article 141 of the Constitution imposes the nature of the organic law on the legal level, as the Constitution considers the organic law on financial laws to be one of the organic laws
[45] Binod Atreya, the applicability of new public management to developing countries: A case from Nepal, (thesis of Doctorate in Philosophy, School of Management, Faculty of Business and Law, Victoria University of Technology, Melbourne, Australia, 2002, pp.28.29
[46]Al-Muntasir Al-Suwaini, The Bet on Efficiency in Public Finance Management in Morocco: A Reading of the Philosophy of Organic Finance Law No. 130.13, Research Journal of Humanities and Social Sciences, Morocco, Issue 5, 2016, p. 231
[47] Abdel Rahman Tsabet, Evaluation of Public Policies in Algeria "A Sectoral Approach", PhD Thesis in Economics, Mustapha Stambouli University - Mascara -, 2015-2016, p. 299
[48] Jacques Chevallier, op.cit., P97.
[49]Harakat Mohammed, Le droit du contrôle supérieur des finances publiques, Edition Babel, Rabat, 1992 p109.
[50] Article 28 of Organic Law N°18-15.
[51] Fubbs Joan, the budget process and good governance, African European institute, 1999, p36.
[52] Leroy Marc, Sociologie des finances publiques, Coll. Repères, éd. La Découverte 2007, p 96
[53] Fubbs Joan, Previously cited reference. P36
[54] Article 02 of Organic Law N°18-15
[55] Article 06 of Organic Law N°18-15
[56] Jean-Pierre Camby, La commission des finances : du contrôle à l'évaluation, RFFP, n° 1 13, 2011 p. 47.
[57] Article 87 of Organic Law N°18-15.
[58] Article 87 of Organic Law N°18-15.
[59] Saeed Bou Al-Shaer, The Algerian Political System - An Analytical Study of the Nature of the Governing System in Light of the 1996 Constitution - Part Three, Second Edition, Office of University Publications, Ben Aknoun, Algeria, 2013, p. 456. (In Arabic).
[60] Akhal Mohamed, The financial powers of the Algerian Parliament under
the constitutional amendment 2020, Numerus Academic Journal, Volume 3, Issue 1, 2022.pp167-190.
[61]Article 02 of Organic Law N°18-15.
[62] International Organization of Supreme Audit Institutions, Lima Declaration, Guidelines for the Audit of Public Finance-pp11-15 Date viewed 25/04/2024 à 21:10 On the link
https://www.intosai.org/fileadmin/downloads/focus_areas/independence/Lima_BUCH_2013_EFDSA.pdf
[63]Article 156 of the 2020 Constitutional Amendment
[64] The Algerian court of accountin his 2024 annual report, he presented 36 recommendations aimed at strengthening internal control mechanisms and establishing sound and effective management of public funds and property. See his 2024 annual report. Date viewed 15/04/2024 at 21:10 On the link https://www.ccomptes.dz/wp-content/uploads/2024/12/RA.2024-AR.pdf.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Mutual Influence of Digital Media and Local Communities in the Age of Automation

Lotfi Ali Guechi
Lecturer professor
UC3 University - Salah Boubnider
Algeria
Email: Lotfi.aliguechi@univ-constantine3.dz,
ORCID iD: 0009-0005-7260-7199

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Digital Media; Local Communities; Automation; Community Engagement ; Local Journalism.

Abstract
This article reports in detail on the in depth study we did of the very complex and reciprocal relationship between digital media and local communities as we see it in the present time of great automation. As digital media technologies which include players like AI and automated content generators grow to be an integral part of our social structure they in turn greatly transform the models of community interaction, local journalism, and the out reach of civic information. At the same time local communities which have their own unique requirements, cultural specifics and social dynamics play a great role in the development, roll out and growth of digital platforms and automated tools. We did a large scale review of the current and recent past inter disciplinary research from 2019 to 2025 which we used to report on main tech trends in local media ecosystems, we also looked at the double edge of what automation brings in terms of issues and opportunities for social cohesion and economic equity and we looked at the changing roles of human input in a world that is more and more run by algorithms. The results present a transformation which as automation grows so does content personalization, operational efficiency, and civic scalability; at the same time however we see large issues with algorithmic representation, participatory equity, and the digital literacy gap. We end by putting forth what we see as practical and policy issues for the health of local publics in digitalized systems which are also put forth as a call to the research community to develop cross disciplinary approaches which will in turn foster a more inclusive and community centered digital transition.

Citation. Guechi A.L. (2025). The Mutual Influence of Digital Media and Local Communities in the Age of Automation. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 734–743. https://doi.org/10.56352/sei/8.11.57

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 28.05.2025 | Accepted: 30.07.2025 | Published: 05.09.2025 (available online)

Introduction:

The community has for a very long time been the base of social organization, a which is a of geographically based proximity, shared identity, and personal relationships. For many generations the health of these communities was supported by what we today term traditional media outlets – local newspapers, radio stations, and community bulletin boards. These institutions served as very important channels for information, identity

reinforcement and public discussion which in turn created a platform for civic life. They did more than just report news they curated a shared story, fostered a great sense of belonging, reported on local power structures which in turn promoted civic accountability and thus wove the social fabric which held communities together. That which may have been imperfect did however provide a stable and recognized structure for local engagement and democracy (Nielsen, 2015).

In the second half of the 20th and the early years of the 21st centuries we saw the introduction of what would become digital media which in turn has very much disrupted what we had known before. The internet put forth new, decentralized, and global scales of communication and information exchange which in turn broke down geographical boundaries and gave way to what at times are interest based associations (Van Dijk, 2020). Social media networks, hyperlocal blogs, and community forums presented what seemed like unlimited chances for connection and information sharing. But also this shift broke up traditional audience groups, challenged the economic models of what was once local media, and also began to change the very nature of community which up until that point was very much place based into a more fluid and networked concept (Bennett & Segerberg, 2012).

At the same time we are seeing the emergence of a second, concurrent disruptive force which is the growth of automation technologies. Out of very fast advances in AI, machine learning, and complex algorithms we are past the stage of these techs being a far off concept and into a present which sees them very much a part of the make up of digital media systems (Susskind, 2020). This intro of automation is very much in the fabric of what runs digital media ecosystems which in turn is very much changing the base elements which support community info flow: in content production which we see in the use of auto journalists and data driven journalism (Carlson, 2015), in content delivery which is via algo based curation on social media and search engines (Gillespie, 2014), and in content which is put out there which we see in very personal info tailored to the individual user (Pariser, 2011). This dual shift – first through the process of digitization and now that of automation – which we see is a very different world for local communities. It calls for a critical study which looks past separate analysis of each of the forces at play to that of their interaction. We must look at the fine and dynamic relationship between digital media and local communities in this age of wide spread automation. Also we see that these techs are not just external instruments but in fact agents of social structure change, also at the same time it is important to note that communities are not passive to this change but rather players that adapt to, push back against, and in fact help to design these technologies (Zuboff, 2019).

This article puts forth to study what is at the heart of our research question: What role do digital media and automation play in the transformation of local communities and in what way do communities play a role in the design of these technologies? We look at this through two main lenses. First we look at how automation is a force which changes the fabric of community – it may bring about new social structures, change how info is shared around, and play a role in the economic growth or decline of a region. Also we look at how community traits, issues which are unique to a place, culture, and also issues of resistance from community members in fact inform the design of which digital tools are used and how they function in practice.

Understanding the complex and dynamic relationship between these issues is more than a theoretical pursuit. It is of great import to many groups which include policy makers that are putting forth AI and digital platform regulations, community leaders which are looking to use tech for social good, and the tech developers which are at work on the next frontiers of what is possible (Pickard, 2020). At great risk we play this out today which is which of these technologies will we see which build up strong, adaptive and inclusive communities or which will we see which put forward existing inequalities, weaken social structures, and break down democracy in our growing digital and automatic world. To in depth look at this complex issue we will present a structured analysis which is what this paper does. We begin by putting forth a wide ranging theoretical framework which includes media ecology, socio technical systems, and political economy perspectives. We then do a in depth review of the present literature to map out the current digital and automated environment. The paper goes on to report on our synthesis method before we present key results of the transformation we see between tech and community. At last we look at the what these results mean which we put out there for use in to shape a sustainable and human centered digital future for local communities.

Theoretical Foundations:

Lenses for Understanding Mutual Influence

To study the intricate relationships between digital media, automation and local communities we have developed a very broad and interdisciplinary theoretical framework. By bringing together these perspectives we are able to present a full picture of how tech systems transform social structures and behaviors and also how communities play a role in that which changes technology.

Media Ecology and Sociotechnical Systems Theory

In the present study we look to Media Ecology Theory which was developed by scholars like Marshall McLuhan and Neil Postman. This theory puts forth that media do not simply and transparently report information but are instead dynamic environments which greatly transform human perception, behavior, cognition and social structure (Couldry & Hepp, 2017). From this point of view digital media platforms (for instance Facebook groups, Nextdoor, local news apps) are not at all the same as tools but are in fact new digital habitats. These habitats change basic elements of community interaction – they shift the speed of communication (instantaneous as opposed to daily print), the scale of audience (global as opposed to local town), and the very make up of collective memory and identity (which is algorithmic as opposed to editorial). Also in to play here is the famous dictum that "the medium is the message" – it is the properties of digital, automated media which in turn shape community life regardless of the specific content they present.

Comprising this is Social Technical Systems Theory (STS) which puts forth the idea of social and technical elements in any complex system as inextricably linked. We see in STS a rejection of technological determinism which presents tech change and social change as a unitary whole. This is a key perspective for looking at the development of digital media and automation which we tend to think of as a pure technical bottom up process. Instead what we have is a dynamic process of negotiation. The design of a social media algorithm for local news for example is a product of social values, economic models and programmer bias (social shaping of tech) which in turn goes on to change social interaction, news consumption and community issues (tech shaping of society) (Bucher, 2018). For a full picture of what is going on we must look at the full human and machine elements.

Social Influence and Community Media Theories

At a detailed level Social Influence Theory (which includes Bandura's social cognitive theory and theories of diffusion of innovations) is key to the explanation of the micro processes of technology adoption within communities. Individuals and out of groups do not adopt new digital technologies in a void. Their adoption is very much a result of what they see as the norm, the actions of opinion leaders in their community, and the which which early adopters in their social network are using the technology (Jenkins et al., 2009). This theory also accounts for the quick often viral take off of platforms like WhatsApp for neighborhood watch groups or Facebook for local event organization which is in great part due to community leaders and early users which play a large role in the validation and integration of the technology into the fabric of community life.

Also in that which Community Media Theory presents we have a normative framework for the discussion of media's role in local life. This theory brings to light the important role played by media that is run by, for and within a specific community. It's base values are participation, access and the promotion of local identity and democratic discussion. This theoretical stand point puts forth a critical measure with which to gauge the effect of digital platforms which are automated and commercial. It brings up fundamental questions like does that which is run by algorithms truly serve local issues or do they instead promote what may divide? Can we use automation to support the cause of community media or does it in fact centralize control away from the local level? This theory also brings to the fore the special value of media which is answerable to its community (Lindgren, 2017).

Economic and Labor Perspectives on Automation

To study the great material impact of automation economic theories are a must. We look at the issue of Technological Unemployment and also include Political Economy which in turn looks at how automation plays out in local economies, restructures employment and in that which we may term the base of community life. Automation brings in the promise of greater efficiency but also we see it's a cause of job loss, task simplification and wage inequality which in particular play out in routine and low skill jobs present in local economies

(example – in local government admin, retail and even elements of journalism). This economic instability which is a result breaks down community stability.

These theories also present a view into adaptive strategies. The idea of Just Transition puts forth that we put in place policies which support workers and communities left behind by tech change via retraining programs, social safety nets, and also we look at new economic models like platform cooperativism (Pickard, 2020). Also we look at the issue of Digital Inclusion which goes beyond just access to tech to also include the elements of skill, affordability and relevant content which together will enable full and equitable participation in the digital space (Van Dijk, 2020). Also this approach we put forward is to see how tech is playing a role in either increasing or decreasing existing socio economic inequalities within and between local communities.

Literature Review:

Mapping the Digital and Automated Landscape

Existing research presents a full though at times broken picture of how digital media and automation are changing community life. This review brings that together which looks at communication, information ecology, and socio-economic structures.

The Dual Role of Digital Media in Community Engagement

Over the past decade research has reported that which we see is a double edge role of digital media. On the hand we see that platforms like Facebook Groups, Nextdoor, and dedicated community apps have become very integral to what we do in terms of community outreach and engagement (Bennett & Segerberg, 2012). They put out info very locally, see and respond to issues almost in real time which in turn prompts large scale action (for instance a local clean up, or a fund raise for a family in crisis) also we see the formation of interest based sub communities which break out of physical boundaries. Also from the likes of the Pew Research Center we see that these tools play a large role in what they term as the constant awareness of goings on in our communities, in effect they are strengthening what we may call weak ties and at the same time are a layer of connection we didn't have before.

On the other hand what we see is that this digital engagement exists with and at times does in fact worsen the want for in depth and genuine connection. Also we see that although Americans are growing to get their news from digital sources what is very much still in demand is that which which fosters local tie and accountability (Nielsen, 2015). This brings out what is a short coming of many digital platforms which while very good at what they do in terms of information out put and weak tie connection are in fact poor at the issue of in depth discussion which is a requirement for the solution of complex local issues. Also in to the hands of private companies we are putting the control of community communication which by and large have as there main accountability to their shareholders and not to the citizens (Zuboff, 2019).

The Transformation and Crisis of Local Journalism

Local news is at the core of what makes up a community's info environment and also is the most affected institutions. Digital technologies have brought about the decline of the traditional advertising based revenue models which in turn has led to mass lay-offs, newspaper shut downs and the growth of what we see as news deserts – communities which do not have a dedicated local news source (Anderson, Bell, & Shirky, 2015). This crisis also has very large scale democratic implications which include reduced civic participation, increase in corruption, and we see a greater political polarization.

In response we see a great deal of innovation in local journalism. Digital native non profit news rooms (for example The Texas Tribune) have appeared which are running on grants and member donations. Legacy players are putting out digital subscriptions, podcasts and email newsletters. Also they are turning to technology for solutions which in turn is a path to survival. This includes in depth use of data journalism to break local stories, use of social media for audience growth and also as we will discuss integrate automation into news production (Lewis & Westlund, 2015).

Automation's Impact on Work and Information Production

The issue of automation in the workforce is a key focus of research which in turn has large scale economic implications for communities. From the research done by groups like McKinsey and the Brookings Institution we see that although automation does boost productivity, what is also true is that these benefits do not fall equally on all (Susskind, 2020). It also tends to take out routine jobs, at the same time which we see is to a large degree responsible for wage stagnation and income inequality. What we are seeing is a 'hollow out' of the middle of the labor market which in turn puts pressure on community resources and also increases social stratification.

In the field of local journalism we are seeing the adoption of automation to address what are very acute resource issues. Tools such as Automated Insights' Wordsmith and United Robots' software are used to produce large amounts of data driven content which we see in real estate transactions, local sports results, and crime reports (Carlson, 2015). This "robot journalism" is a complement to human reporters which in turn free them from routine tasks to do in depth investigative and analysis work. It also helps to expand coverage which in turn maintains audience engagement. From case studies in Scandinavian countries which have high adoption rates we are seeing very promising results in terms of news output.

However in the literature we see that which puts forth great issues. Automated systems are a reflection of the data they are trained on. They do what they are trained to do which is to repeat and amplify present biases and at the same time which may ignore niche or minority reports that do not have large representation in the training data (Gillespie, 2014). This in turn creates a risk of a new "algorithmic divide" which sees some community issues and groups left out in the automated news report. Also we are still at the stage which we are trying to work out the ethics of automated content generation – transparency, accountability for errors, and the issue of use which may include the spread of misinfo (Graves, 2018).

Methodology:

A Systematic Synthesis-Driven Approach

Given the large scale and multidisciplinary scope of the research question this study uses a systematic, theory based literature review approach. We put forth this approach which is best for the synthesis of present knowledge, to also which is to say we identify what is agreed upon and what is not in the literature and in which we present a novel conceptual framework that which puts forth the results of that analysis.

Data Collection and Selection Criteria

The research did a in depth and iterative review of sources put out between 2019 and 2025 which we did to get the latest data. We looked at four main types of sources :

1- Academic Databases: In Scopus, Web of Science, and Google Scholar we found peer reviewed articles which we located via keyword combinations of ("automation" or "AI") and ("local journalism" or "local news"), ("digital media") and ("community engagement") and also ("algorithmic curation") and ("local community").

2- Industry and Policy Reports: Also we looked at grey literature from top groups like Deloitte, McKinsey Global Institute, Pew Research Center, and the Knight Foundation which gave us info on trends, adoption rates and economic impact.

3- Organizational Resources: We looked at what the Local Media Association, the Center for Community Media, and the International Center for Journalists had to say which covered practical applications and ground level challenges.

4- Case Studies: We did in depth qualitative analysis of certain put forth by which we look at automated community management platforms (for instance moderation tools on large community forums) and local media automation initiatives in particular in Scandinavia (which includes MittMedia in Sweden) and North America.

Data Analysis Framework

The we conducted a qualitative content analysis which included:

- Coding: We did thematic coding of the literature based on our prior theoretical frameworks (we used codes for "algorithmic bias", "digital literacy initiatives", "revenue model innovation", "social cohesion").
- Synthesis: We very carefully put together results from very diverse sources to bring out over arching themes, which reports what we found to be true time and again as well as the big issues we came across.
- Framework Development: We put together these themes to present a which is a whole new model that puts forth the what how digital media, automation and communities play off each other and what are the results of that play.

It is important to note we did not collect any new primary empirical data for this study. Our contribution is in taking existing research and in a novel way we put it together and we gave a full picture of a very complex and evolving issue.

Results:

In a review of present day research we see that which is put forth is a world of what may be termed as in process and continuous change between digital media, automation, and local communities. This is not a one way street but a very complex set of issues which see in play for example between efficiency and equity, and also between scalability and authentic representation. We note 3 main thematics which contain in them these in between and at time conflicting issues.

1. The Efficiency-Scalability-Personalization Triad: New Capabilities and New Vulnerabilities

Automation technologies have infused local digital ecosystems with what was once beyond imagination, mainly in terms of efficiency, scale, and relevance.

- **As a Prerequisite for Success, Not a Nice To Have:**
Automation is what local institutions that are under very tight resources use as a primary tool. In which we see that in issue of economic pressure to which local newsrooms are at the moment of breaking point, use of AI within the form of NLG software is introduced. This technology is used to produce large amounts of data based content that reports out on things like which high school scored in what game this past weekend, which house sold for what price in that neighborhood, and what was the report on crime in our area for the week (Carlson, 2015). For example we see in the case of Scandinavian regional newspapers which have implemented reporting automation what we that they report an increase of 20% in the reporters' time which in turn they put into in depth investigative reports, nuanced feature stories and community engagement – which are very much a human element and require analysis and empathy. Also in local government we are seeing more and more use of chatbots on community association websites in regard to very regular citizen requests for info on trash collection, permit applications, or event registration. This is not just a way to cut costs but a strategic shift to run a base level of public service and info out put in a very resource starved environment which in turn allows basic civic functions to continue to operate with less human resources.

- **Unprecedented Scalability of Community Management:**

Digital platforms that which run on automated content moderation tools, sentiment analysis algorithms, and automatic membership management systems are now able to support community growth to a size and diversity which would be impossible through human effort alone (Bucher, 2018). A single community manager with these tools at her disposal is able to run a network of thousands of members which she does so by using the auto systems to report out on toxic language, to identify issues which are flaring up and to handle the routine admin tasks. This scale which we see is enabling the formation and also the maintenance of very large, distributed "communities of interest" which break free of physical geography, for instance national groups for owners of a certain breed of dog or global networks for professionals in a very niche field. But this scale also brings a trade off in that which we lose out on the in depth local knowledge a human moderator brings. The automation does a great job at managing scale but can fall short in the quality, context which goes into local community norms and in the interpersonal relationships.

- **Hyper-Personalization and the "Local Filter Bubble":**

AI designed recommendation algorithms do very well at personalizing what each individual gets out of digital communities (Pariser, 2011). What a member sees in terms of local news, which social groups to join, what events are put forward to them is very much a very tailored experience – we see news from a certain neighborhood, updates from your child's school, info on local zoning which affects your street. This very fine tuned personalization increases the relevance of the info right away and in turn engenders greater user engagement in a digital space that is made just for you. Also it creates what we may call a "local filter bubble" a personal information world that may in fact reduce what is put in front of a citizen which is the greater issues of the wider community. While it does increase that which which a like minded group affiliate with each other, at the same time it may also play a role in breaking down the common pool of info that is required to address wide scale community issues and in turn in the development of a common community identity (Nechushtai & Lewis, 2019).

2. The Challenges of Equity, Representation, and Human Agency: The Perils of Algorithmic Mediation

The push for efficiency, scale, and personalization presents great risks which in turn threaten the core principles of equitable representation and democratic accountability in local communities.

- **Algorithmic Oversight and Systemic Bias:**

Across large scale of studies we see that which we put forward in automation of efficiency brings with it inborn issues of bias and misrepresentation (Gillespie, 2014). We see that which which automated content moderation systems do of which they are trained on large general sets do in fact often fail to understand local context, dialect or satire. This in turn causes the mis identification and removal of what is in fact local discourse as toxic content which in turn goes after minority groups and activists whose language may not play by the main stream rules. Also that which news generating algorithms are only as objective as what they are given to feed them. If historical data on crime or event coverage which is in fact biased against certain neighborhoods is what is put in, the algorithm will not only reproduce but also amplify this issue which in turn does the marginalization of already underserved communities (Nechushtai & Lewis, 2019). Also the algorithms design to put out what gets the most user engagement does so which puts forward sensational, divisive or very emotional content which in turn skews the public digital sphere away from the serious fact based discussion and into conflict thus increasing the polarization of the community.

- **The Digital Literacy Imperative and the New Frontier of Inequality:**

The growth of digital automation has brought about a very steep and diverse learning curve for what it takes to be an active member of the digital civic space (Van Dijk, 2020). We see that simple access to the internet is no longer enough. What we are instead is a requirement for advanced digital literacy skills which in turn is a pre-requisite to use of algorithmic news feeds, to tell the difference between machine generated content and human journalism, to get to terms with complex issues of data privacy, and to think critically about the large volume of info we are presented with. Also this has brought up a new form of inequality – what we are seeing is a digital fluency gap. Seniors, low income groups and those with less formal education are at great risk of being left out – not just as info consumers but as players in the digital civic space (Jenkins et al., 2009). Thus, their voices and issues may go unrepresented in what we may call digital town squares which in turn plays into and increases the social economic gaps within communities.

- **Erosion of Traditional Accountability and the Devaluation of Local Knowledge:**

The integration of automation is blurring what used to be clear lines of accountability which at its core changes the character of labor in community information ecosystems (Graves, 2018). When an automated system gets out with an inaccurate story or a chatbot gives a citizen wrong info a key question we are left with is which is at issue – the software developer, the media company which put it out, or the public institution which bought it? This accountability gap can erode public trust. Also the transition of newsroom labor from field reporting to data management, algorithm monitoring and tech maintenance is a large scale issue. It may in fact erode what we may call "institutional knowledge" – that in depth knowledge of a community's history, power structures and unspoken rules which is held by the senior local journalists (Anderson, Bell, & Shirky, 2015). That which is the base of in depth and trusted journalism and effective community management which at present algorithms are not able to reproduce. The risk is we see a move towards a more technical efficiency but less context rich information environment.

3. Community-Led Adaptation and Resilience: Agency in the Automated Age

In response to these great challenges the literature reports that local communities do not passively accept technological change but are in fact very much a part of that change which they adapt to and which they in turn shape – also they develop innovative practices which restore their role.

- **Digital Literacy Coalitions as a Response:** We see that there is a digital fluency gap which has in turn produced from the bottom up responses to build up community based resources. Public libraries, community centers, and non profit organizations are at the fore front of digital literacy training (Jenkins et al., 2009). Also what we are seeing is that these initiatives go beyond the basic computer skills to include "algorithmic literacy" which is the study of how news feeds and recommendation systems work also we see the introduction of critical thinking skills which in turn help citizens to identify automated content and misinformation. These coalitions are a very important civic effort to see that the community as a whole is able to play a full role in the new digital public square.

- **Support for Alternative, Community-Centric Models:**

  A large trend at present is the increase in support for alternative economic and governance models which put out of play the big tech platforms' metrics of success and instead which account for local wants (Pickard, 2020). This includes the growth of member based non profit local news organizations (for instance City Bureau in Chicago, The Texas Tribune) which put forward civic value above all else. Also we see greater interest in platform cooperativism – which is when the digital community platform is run and governed by its members – thus the rules of the road and algorithmic principles are set by the community's themselves instead of by remote corporate entities (Lindgren, 2017).

- **Strategic Partnerships for Sustainable Innovation:**

  Finally, we see a trend of local media players and community groups which have begun to form strategic alliances to pool resources and expertise. These collaborations which may include local universities (for research and technical development), tech start ups (for tool development and implementation) and community foundations (for funding and local legitimacy) (Lewis & Westlund, 2015). These hybrid models they put in place create a more sustainable and resilient ecosystem for local info. For example a local news room may team up with a university's computer science dept to develop a custom ethically audited algorithm for which curates local event news thus the tech is tailored to the community's specific values and needs as opposed to a one size fits all commercial product. This is a practical solution which also brings in the benefits of automation while at the same time keeping development and deployment in a local context and under human supervision.

Discussion

This study reports we see a very complex and at the same time very much a part of each other relationship between digital media, automation, and local communities. That which we see is not of a linear cause and effect but of a continuous feedback loop in which technical systems put forth new terms for social interaction and info flow and at the same time communities which are responsive, resistant, and also shapers of these very technologies. This plays out as a very fine line we must walk between efficiency and equity, scalability and true representation, personalization and public discourse which determines the future of local community life in the digital age.

The key issue we face is to put in place a framework which takes in the great benefits of what we get from the efficiency-scalability-personalization trio while at the same time very carefully dealing with its issues. We must go beyond a pure technical approach; we require a socio technical solution which puts social values into tech design (Bucher, 2018). This begins with a very strong base in human centered design which sees algorithms as aids to human decision making not replacements. In practice this means we see to it that there is meaningful human input – what some term a "human in the loop" system – which puts forward issues for final human review by automated content moderation and which has algorithmic news generation supported by in depth reporting and ethical editing. Also this approach protects the in depth understanding, context awareness and

moral responsibility which is the base of community trust and democratic discussion. Also we must have transparency which is non negotiable in this issue of accountabiliity; users must be made aware of how algorithmic systems put together their info environment and when they are in fact interacting with auto generated content (Graves, 2018).

However, it is true that tech design by itself is not enough. In the coming age of automation what we see is that which which local communities will sustain themselves out of will be a balance between what we put into digital tools and also into social infrastructure (Van Dijk, 2020). This is a two pronged approach of which we build digital literacy and at the same time we strengthen physical institutions. We must develop what I will term advanced digital fluency in our citizens which includes the ability to critically use algorithmic feeds, to sort through automated content and to protect privacy (Jenkins et al., 2009). Also at the same time we must put forward that while libraries, community centers, and local press may be of the past they are in fact the present and the future of community identity. These institutions serve as that which is trusted and human curated which in turn foster serendipity and face to face connection that algorithms do not. They are the cure to the breaking up and isolation that automated systems may cause.

In the base of these efforts should be a radical rethinking of economic models which in turn will ensure that the benefits of automation are equitably distributed and do not worsen present inequalities (Pickard, 2020). We are at a point which large tech players' power and revenue is concentrated in the hands of a few which in turn requires we think up innovative policy and community based solutions. This may include in to negotiating community benefit agreements which see tech companies put a part of their profit into the local digital infrastructure which they use, putting forward public funding models and tax breaks for independent local journalism, and also pushing for platform cooperativism which is a model in which digital community platforms are run and governed by their users (Lindgren, 2017). These models put forward that governance and algorithmic issues should support community values as opposed to profit extraction.

In the end which is what this all comes down to we have a great need for strong policy and governance responses. Self regulation has0 out proved to be insufficient for the size of the issue at hand (Zuboff, 2019). It is time for legislators and regulators to take action in the mandating of algorithmic transparency which in turn will enable independent audit to identify and put a stop to bias. Also required are antitrust measures which will break up big tech's dominant position in the market and in their wake foster the growth of alternative community based models. What we as a policy must aim for is the development of what we may term a digital public sphere which we will know is successful by its impact on issues like informed discussion, civic participation, and social cohesion not by the shallowness of user engagement metrics (Vredenburg & Spry, 2020). We will see this through with thought out design, in put from into social infrastructure, creative economic models, and bold policy – only then will we be able to guide our way through to a world in which digital automation is a force that which does good by our local communities' health and diversity, instead of damage.

Conclusion:

The digital transformation of our age is seeing local communities and the media which serves them influence each other in new ways – it is a defining process of our time that is very much in the process of redefining how we interact socially, do business, and participate in civic affairs. AI and automation put at our disposal very powerful tools to improve the scale, scope and impact of local info exchange (Susskind, 2020). But also they are not magic solutions; they are rather what we put into them which in turn will play out existing issues of intent and inequality.

We will not achieve a sustainable future for local communities in a digital age through tech alone. What is required is a whole scale, integrated approach which puts together tech innovation with effective, people centered governance, wide scale and inclusive digital education, and design that is empathetic, equitable and which is accountable to the local community (Dutton, 2009). The health of our local communities is in our hands as we navigate this co evolutionary process which we are a part of, and which we must steer with care to see that the digital spaces we create are not just about connection but also about true belonging, not just the flow of info but also that of understanding and not just growth in efficiency but in also in terms of resilience and democracy.

Future Research should focus on longitudinal studies which track these changes over time, also we should see to it that we develop and evaluate adaptive policy frameworks, and very much so we put in place participatory design methods which include community members in the development of the technologies which are to serve them (Tandoc, 2019). The issue is not that automation will shape our communities but that we will together shape automation to build the communities we wish to live in.

References

1. Anderson, C. W., Bell, E., & Shirky, C. (2015). *Post-industrial journalism: Adapting to the present*. Tow Center for Digital Journalism. https://doi.org/10.7916/D8N01JS7
2. Bennett, W. L., & Segerberg, A. (2012). The logic of connective action: Digital media and the personalization of contentious politics. *Information, Communication & Society, 15*(5), 739–768. https://doi.org/10.1080/1369118X.2012.670661
3. Bucher, T. (2018). *If...then: Algorithmic power and politics*. Oxford University Press. https://doi.org/10.1093/oso/9780190493028.001.0001
4. Carlson, M. (2015). The robotic reporter: Automated journalism and the redefinition of labor, compositional forms, and journalistic authority. *Digital Journalism, 3*(3), 416–431. https://doi.org/10.1080/21670811.2014.976412
5. Couldry, N., & Hepp, A. (2017). *The mediated construction of reality*. Polity Press.
6. Dutton, W. H. (2009). The fifth estate emerging through the network of networks. *Prometheus, 27*(1), 1–15. https://doi.org/10.1080/08109020802657453
7. Gillespie, T. (2014). The relevance of algorithms. In T. Gillespie, P. J. Boczkowski, & K. A. Foot (Eds.), *Media technologies: Essays on communication, materiality, and society* (pp. 167–194). MIT Press. https://doi.org/10.7551/mitpress/9780262525374.003.0009
8. Graves, L. (2018). *Understanding the promise and limits of automated fact-checking*. Reuters Institute for the Study of Journalism. https://reutersinstitute.politics.ox.ac.uk/our-research/understanding-promise-and-limits-automated-fact-checking
9. Jenkins, H., Purushotma, R., Weigel, M., Clinton, K., & Robison, A. J. (2009). *Confronting the challenges of participatory culture: Media education for the 21st century*. The MIT Press. https://doi.org/10.7551/mitpress/8435.001.0001
10. Lewis, S. C., & Westlund, O. (2015). Big data and journalism: Epistemology, expertise, economics, and ethics. *Digital Journalism, 3*(3), 447–466. https://doi.org/10.1080/21670811.2014.976418
11. Lindgren, S. (2017). *Digital media and society*. SAGE Publications.
12. Nechushtai, E., & Lewis, S. C. (2019). What kind of news gatekeepers do we want machines to be? Filter bubbles, fragmentation, and the normative dimensions of algorithmic recommendations. *Computers in Human Behavior, 90*, 298–307. https://doi.org/10.1016/j.chb.2018.09.003
13. Nielsen, R. K. (2015). Local journalism: The decline of newspapers and the rise of digital media. *Reuters Institute for the Study of Journalism*. https://reutersinstitute.politics.ox.ac.uk/our-research/local-journalism
14. Pariser, E. (2011). *The filter bubble: What the Internet is hiding from you*. Penguin Press.
15. Pickard, V. (2020). *America's battle for media democracy: The triumph of corporate libertarianism and the future of media reform*. Cambridge University Press. https://doi.org/10.1017/9781139991722
16. Susskind, D. (2020). *A world without work: Technology, automation, and how we should respond*. Metropolitan Books.
17. Tandoc, E. C., Jr. (2019). The facts of fake news: A research review. *Sociology Compass, 13*(9), e12724. https://doi.org/10.1111/soc4.12724
18. Van Dijk, J. (2020). *The network society* (4th ed.). SAGE Publications.
19. Vredenburg, J., & Spry, A. (2020). Brand purpose and the prioritisation of societal well-being. *Journal of Public Policy & Marketing, 39*(4), 450–461. https://doi.org/10.1177/0743915620949233
20. Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Public Affairs.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Exploring the Contribution of Small and Medium Entreprises to Non-Oil Exports in Algeria: A Regression Analysis Approach

Yasmina Kaci
Dr
Managing financial markets using mathematics and automation, Ahmed Zabana University of Relizane
Algeria
E-mail: kaciyasmina217@gmail.com, Orcid:0009-0004-6267-8623

Mohamed Boulesnam
Pr.
Laboratory of Macroeconomics and International Finance, Yahia Fares University of MEDEA
Algeria
E-mail: Boulesnam.mohamed@univ-medea.dz, Orcid: 0009-0003-9677-7788

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Algeria, SMEs, non-oil exports, trade diversification, regression analysis, export performance, hydrocarbon dependency.

Abstract
The Small and Medium Entreprises in Algeria and their contribution to the country's non-oil exports is the major focus of this study from 2000 to 2023 by means of descriptive trade analysis and a log-linear regression model. Data were based on official sources provided by the Central Bank of Algeria in order to calculate trade balance trends, analyze export composition, and evaluate the percentage of non-hydrocarbon exports before estimating the effect of SME growth on export performance. The results show that SMEs have a positive and statistically significant impact, with 47.5% being the share of explained variation of non-oil exports. However, export growth has remained more volatile than SME growth, showing the existence of structural constrictions and dependence on external market conditions. The findings stress that enhancing SME competitiveness and innovativeness and integrating them into global value chains through policy intervention is pertinent so that the diversification of exports away from hydrocarbon dependency is actually realized.

Citation. Kaci Y., Boluesnam M. (2025). Exploring the Contribution of Small and Medium Entreprises to Non-Oil Exports in Algeria: A Regression Analysis Approach. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 744–757. https://doi.org/10.56352/sei/8.11.58

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

JEL Codes: F13, F14, F43, L25, O24.

Received: 09.01.2025	Accepted: 22.03.2025	Published: 14.05.2025 (available online)

Introduction

Due to their importance in promoting innovation in the economy, creating jobs, and developing inclusive growth, small and medium-sized enterprises (SMEs) are today the nucleus of any country's economic development strategy. SMEs are a majority source of enterprises all over the world, and it is widely accepted that they represent significant engines of productivity and competitiveness, particularly in emerging and developing economies. They

ensure export diversification and, therefore, lower the exposure of economies to fluctuations in commodity prices-the challenge many countries face due to their resource dependency.

Over the last couple of decades, there has been growing interest among scholars and policy-makers on the relationship between SMEs and export growth. The sparse empirical evidence collected over the years from various parts of the world shows that SMEs can enhance their export performance significantly when accompanied by other factors such as adequate access to finance, trade facilitation measures, and incentives for innovation. Nevertheless, SMEs continue to be excluded from global trade mainly because of structural and institutional constraints ranging from regulatory burden, high transaction costs, and lack of knowledge of international markets.

For hydrocarbon-dependent economies like Algeria, exporting beyond oil and gas is not merely an aspirational objective but a necessity in the strategic sense. Hydrocarbons constitute a proportionately overwhelming share of the revenue earned from exports by Algeria, exposing the country to a heavy dependence on international fluctuations of energy prices. In 2009 and 2014–2015, periods of instability in the oil market highlighted the structural fragility of this dependency, usually leading to trade deficits and fiscal imbalances. Non-oil exports have become a priority of policy in that context, and SMEs are ostensibly the possible engines of such diversification.

Although Algeria has witnessed steady growth in the number of SMEs over the past two decades, it remains unclear whether this expansion has translated into substantial gains in non-hydrocarbon exports. While policy discourse consistently highlights SMEs as key actors in promoting export diversification, empirical research that quantifies their impact on non-oil export performance in the Algerian context is scarce. Most existing studies focus on broader SME economic contributions or rely on cross-country comparisons, leaving a gap in country-specific, regression-based analyses. The volatility observed in Algeria's non-oil export performance, contrasted with the relatively stable growth of SMEs, raises important questions about the strength and consistency of the relationship between the two, questions that this study addresses by applying a regression analysis approach to national time-series data covering the period 2000–2023.

Literature Review

Small and Medium Enterprises (SMEs) are widely acknowledged as engines of economic growth, job creation, and innovation across both developed and developing economies. Globally, they account for over 90% of firms, employ more than half of the global workforce, and contribute substantially to GDP (Morales Pedraza, 2021; Vulić, 2021; Koguashvili & Koridze, 2022). Their participation in international trade, although proportionally lower than that of large enterprises, has been increasingly recognized as a driver of export diversification and competitiveness (Savlovschi & Robu, 2011; Lopez Gonzalez & Sorescu, 2019). For instance, WTO (2021) estimates that SMEs represent 33% of exports in developed countries but only 18% in developing ones, reflecting structural and institutional disparities.

In advanced economies, several studies provide insights into the export potential of SMEs. Batrancea (2022) finds that online and extra-EU trade significantly influence SME-driven growth in the European Union, while Petrunenko et al. (2022) demonstrate a strong correlation between SME turnover and GDP in Eastern Europe. Małecka (2017) emphasizes that EU-based SMEs benefit from state support, long-term cooperation opportunities, and product demand in foreign markets, factors that enhance their stability in international trade. In the UK, Gkypali, Love, and Roper (2021) identify both "learning-to-export" and "learning-by-exporting" effects, highlighting the role of innovation in building export capability. Similarly, Wilkinson and Brouthers (2006) show that targeted export promotion, such as trade shows and agent identification, can improve SME satisfaction with export performance.

In developing and emerging economies, research presents a more complex picture. Lê (2022) reports that Vietnamese SMEs benefit from sustained export participation, although the study does not distinguish between oil and non-oil exports. In China, Zhang and Xia (2014) highlight the dominant role of SMEs, 98% of industrial enterprises, in GDP and employment generation, while stressing their contribution to absorbing labor market entrants. In Nigeria, Oluremi and Maku (2024) find that SME trade, bank loans, and labor force participation positively affect economic growth, though patent applications show a negative relationship. In Jordan, Abuhatab (2023) observes that despite supportive policies, MSMEs have had an insignificant impact on GDP per capita growth, due to persistent structural barriers.

Some studies directly address SME contributions to non-oil exports. Qobuljon (2024) argues that SMEs enhance export diversity by targeting niche markets and integrating into global value chains, but require government support to overcome regulatory and financial constraints. Similar findings emerge in Egypt, where El-Said, Al-Said, and Zaki (2015) show that bank access boosts both the likelihood and diversification of SME exports. In Asia, Jinjarak, Mutuc, and Wignaraja (2016) find that financial access is critical for SME internationalization, while Duval and Utoktham (2014) identify customs efficiency, quality certification, and trade finance as key enablers for participation in production networks.

Beyond macro-level impacts, micro-level determinants are equally significant. Safari and Saleh (2020) apply a resource-based view to show that innovation, networks, and managerial readiness are central to export success. Revindo, Gan, and Hambali (2024) stress the importance of post-export support to sustain growth, while Khattak et al. (2011) and Stouraitis et al. (2017) reveal that internal managerial barriers, such as lack of export knowledge, are often more constraining than external factors. Juminawati et al. (2021) further highlight the role of SMEs in boosting regional economies by creating business opportunities and introducing innovative products.

From a methodological standpoint, regression-based analyses provide quantifiable evidence of SME impacts. Piratheesan (2019) shows that SMEs account for 62% of regional development in Sri Lanka, suggesting potential for export-led growth. Akighir and Joseph (2019) find that non-oil exports positively influence GDP in selected African countries, although the effect is statistically insignificant when SMEs are not isolated. Muthuraman (2020) conceptualizes SMEs as pivotal to integrating local industries into global supply chains, thus enhancing export potential.

Several reviews consolidate the current knowledge base. Calheiros-Lobo et al. (2023) identify gaps in longitudinal research, theory integration, and niche market strategies. WTO (2021) and Savlovschi & Robu (2011) emphasize the need for better data collection and policy alignment to boost SME competitiveness. Together, these studies point to finance, innovation capacity, trade facilitation, and institutional support as recurring themes in SME export performance.

Despite this breadth of research, the literature on SMEs and non-oil exports remains fragmented, particularly in the Algerian or North African context. Most studies are either cross-country or sector-specific, limiting their direct applicability to Algeria. The present study addresses this gap by adopting a country-specific approach using official Algerian trade and SME data over a 21-year period. By combining descriptive trade analysis with regression techniques, it seeks to quantify SMEs' contribution to non-oil exports, offering both empirical evidence and policy-relevant insights.

Methods and Tools

This study adopts a quantitative research design to examine the contribution of Small and Medium-sized Enterprises (SMEs) to Algeria's non-oil exports over the period 2002–2023. The methodological process follows a sequential approach, beginning with descriptive trade analysis and culminating in econometric modeling to quantify the relationship between SMEs and non-oil export performance.

All statistical data were obtained from the official publications of the Central Bank of Algeria, ensuring both accuracy and national relevance. The analysis begins with an assessment of Algeria's trade balance dynamics. Exports and imports are reported annually to calculate the trade coverage ratio, defined as total exports to total imports, and this is an important indicator upon which the country can find the ability to finance imports with export revenues. This indicator gives some insight into structural imbalances of trade as well as the sustainability of external accounts.

The second step is to break Algeria's structure of exports into hydrocarbon and non-hydrocarbon components. This way, the annual share of non-oil exports in total exports will be calculated, thus allowing an evaluation of the extent of diversification on exports and reduction of dependence on hydrocarbon revenues. The trend of non-oil exports from 2002 to 2023 is explored in detail, with specific attention being paid to the effects from the fluctuations of the oil market and economic policy reforms.

On the econometric phase, the study uses a log-linear regression model to analyze the impact of SMEs on non-oil exports. The dependent variable is the natural logarithm of non-oil exports (in billion USD), while the independent variable is the natural logarithm of the number of SMEs. This functional form is selected to stabilize the variance, provide elasticity interpretations, and describe proportionality relations. The model is estimated using the Ordinary Least Squares (OLS) method with the validation of models being tested through normal diagnostic statistics like R-square, adjusted R-square, t-tests, p-values, etc.

Data processing, visualization, and statistical estimations were performed using Microsoft Excel and SPSS software. Both of these applications enable time series management, regression computations, and the generation of graphical outputs for aiding the interpretation of the empirical results.

Trade Dynamics and the SME Contribution to Non-Hydrocarbon Exports in Algeria (2000–2023)

Here are three closely interlinked areas of analysis being presented. First is an analysis of the trade balances of Algeria from 2000 up to 2023, highlighting major fluctuations and the relevant economic factors behind them. The second area is focusing on non-hydrocarbon export performance in the same period with an assessment of their importance in national economic diversification. An empirical assessment of SME contributions to the development and expansion of these exports from 2002 to 2023 is the third subject matter being discussed. All these analyses give a wholesome view of Algeria's trade, diversification initiatives, and SMEs' strategic involvement in the country's export-formation landscape.

1. The Algerian Trade Balance: Trends and Developments (2000–2023)

As far as Section One is concerned, it will focus much on the analysis of changes in Algeria's trade balances over the period of study, looking at important trends, transformations, and determinants. This will also study the changes in global energy prices, the changes in import-export volumes, and impact trade policies on how they affect the balance of payments. That path eventually renders an account of how structured these elements are. Therefore, that would illuminate the defining characteristics of Algeria's external trade as well as its sensitivity to outside economic shocks at some earlier stage.

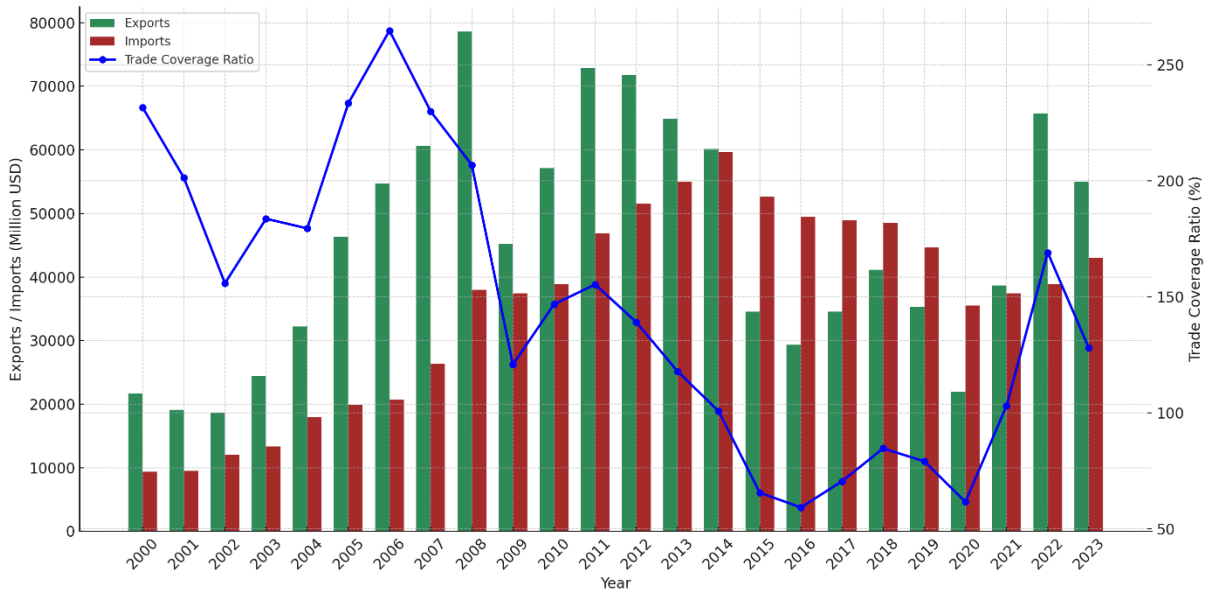
Table 01. Algeria's Balance of Trade Trends (2000–2023)

Years	Exports Billion USD	Imports Billion USD	Balance of Trade Billion USD	Trade Coverage Ratio
2000	21.65	9.35	12.3	231.55
2001	19.09	9.48	9.61	201.37
2002	18.71	12.01	6.70	155.84
2003	24.46	13.32	11.14	183.64

2004	32.22	17.95	14.27	179.49
2005	46.33	19.85	26.48	233.40
2006	54.74	20.68	34.06	264.70
2007	60.59	26.35	34.24	229.94
2008	78.58	37.99	40.59	206.85
2009	45.18	37.40	7.78	120.81
2010	57.09	38.88	18.20	146.81
2011	72.88	46.92	25.96	155.32
2012	71.73	51.56	20.16	139.10
2013	64.86	54.98	9.87	117.96
2014	60.12	59.67	0.45	100.76
2015	34.56	52.64	-18.083	65.65
2016	29.30	49.43	-20.12	59.28
2017	34.56	48.98	-14.41	70.57
2018	41.14	48.57	-7.42	84.71
2019	35.32	44.63	-9.30	79.14
2020	21.93	35.54	-13.61	61.69
2021	38.63	37.46	1.17	103.12
2022	65.71	38.86	26.84	169.07
2023	54.98	42.96	12.01	127.97

Source: Statistics of the Bank of Algeria 2000–2023

Figure 01. Evolution of Algeria's Balance of Trade, 2000–2023



Source: Statistics of the Bank of Algeria 2000–2023

Between 2000 and 2008, Algeria had a favorable trade surplus during those years, enjoying the high trade coverage ratios of exports against imports. Exports were higher than imports every year, with coverage exceeding 175% and going all the way to an overwhelming 264.7% in 2006. High demand from international markets and substantial oil prices were the predominant factors for Algeria's performance, which is mainly

dominated in export structure by hydrocarbons. Meanwhile, imports have been growing but the earnings from exports were large enough to protect the external accounts.

In 2009 with the global financial crisis: a more volatile phase for Algeria was beginning. In that year, stark declines in exports diminished trade coverage to 120.81% while the surplus itself, which amounted to an insignificant 7.78 billion USD, was brought closer to the red zone. Although exports were recovering until about 2012, volatility was at play. Come 2014, the almost-balanced trade account was only 0.45 billion USD in surplus, with a coverage ratio of 100.76%, indicating vulnerability to oil market external shocks.

Between 2015 and 2020, Algeria faced persistent trade deficits, coinciding with the oil price collapse of 2014–2015. The trade coverage ratio fell significantly, hitting a low of 59.28% in 2016. Throughout this period, imports consistently exceeded exports, despite government efforts to control import volumes. The largest deficit occurred in 2016 at -20.12 billion USD, highlighting the structural dependence on hydrocarbon revenues and the limited diversification of exports.

The period from 2021 to 2023 brought a noticeable recovery. In 2021, the country recorded a slight surplus of USD 1.17 billion, with a coverage ratio slightly over 100%. This recovery continued intensively into 2022, with exports reaching USD 65.71 billion and coverage attaining 169.07%, buoyed by recovering energy prices and stronger export volumes. In 2023, the performance moderated, with exports at USD 54.98 billion and a coverage ratio of 127.97%, while the trade surplus was very healthy at USD 12.01 billion.

Overall, Algeria's trade performance over these two decades shows a clear dependence on hydrocarbons, with export revenues and trade balances closely linked to global oil and gas prices. Coverage ratios have been volatile, reflecting exposure to external shocks. The deficits of 2015-2020 stress the risks of this dependence and the urgency to diversify exports. The resilience shown in the recovery from 2021 onward is, however, conditional on the existence of favorable circumstances; continued and stable performance will need some structural reform to enhance and diversify the export base.

2. Non-Hydrocarbon Exports in Algeria: An Overview (2000–2023)

The current section will focus on the trends of Algeria's export of non-hydrocarbon products within the time frame 2000 to 2023; growth patterns, sectoral composition, and contributions to the national economy are highlighted. It brings to focus government interventions to promote export diversification, the competition from the global market, and structural barriers to competitiveness. The main purpose of the discussion is to examine the above-mentioned elements and present a discussion on the progress and challenges in reducing Algeria's reliance on hydrocarbon revenues.

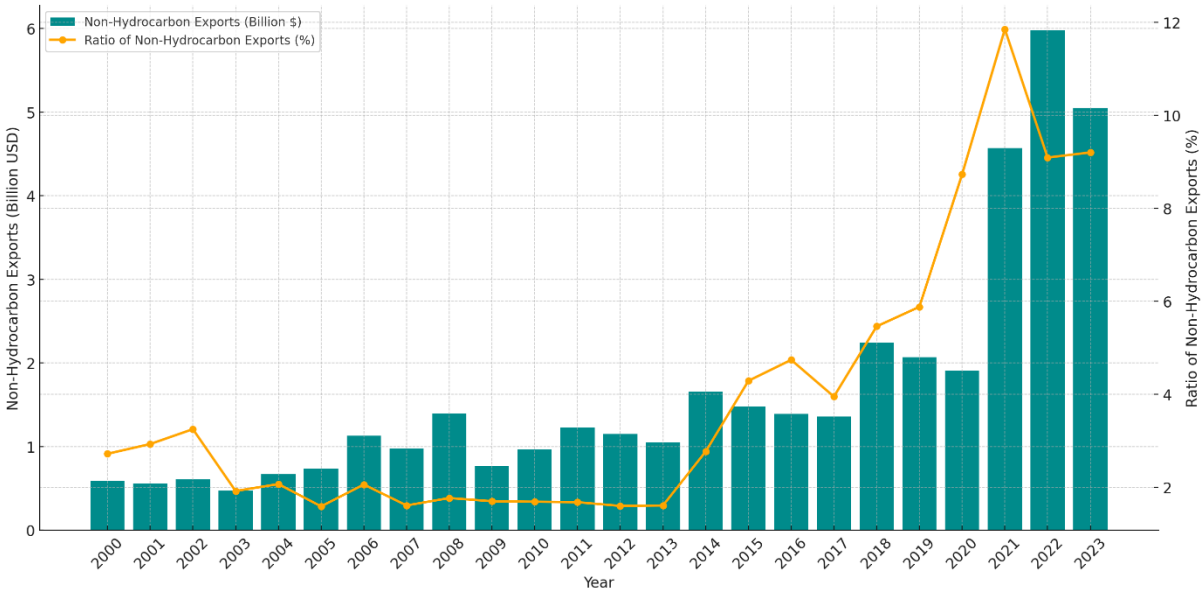
Table 02. Non- Hydrocarbon Exports in Algeria During the period 2000-2023

Year	Non-Hydrocarbon Exports Billion USD	Ratio of Non-Hydrocarbon Exports
2000	0.59	2.72
2001	0.56	2.93
2002	0.61	3.25
2003	0.472	1.92
2004	0.67	2.07
2005	0.74	1.59
2006	1.13	2.06
2007	0.98	1.61
2008	1.395	1.77

2009	0.771	1.70
2010	0.969	1.69
2011	1.227	1.68
2012	1.153	1.60
2013	1.05	1.61
2014	1.66	2.77
2015	1.48	4.29
2016	1.39	4.74
2017	1.36	3.95
2018	2.24	5.46
2019	2.07	5.88
2020	1.91	8.73
2021	4.57	11.85
2022	5.98	9.09
2023	5.05	9.20

Source: Statistics of the Bank of Algeria 2000–2023

Figure 02. Non-Hydrocarbon Exports Values and Ratios 2000-2023



Source: Statistics of the Bank of Algeria 2000–2023

From 2000 to 2008, Algeria's non-hydrocarbon exports remained relatively low in value, ranging from 0.472 to 1.395 billion USD. The ratio of non-hydrocarbon exports to total exports was also modest, fluctuating mostly between 1.59% and 3.25%. This period reflects a highly resource-dependent export structure, where hydrocarbons dominated, and non-hydrocarbon sectors contributed only marginally to external trade. Slight improvements in export value were seen in 2006 and 2008, but the overall share of these exports remained limited.

Between 2009 and 2014, non-hydrocarbon exports experienced small variations in value, staying below 2 billion USD annually, with the ratio hovering close to 1.6–1.7% except for a notable rise to 2.77% in 2014. The lack of strong growth during this period suggests limited diversification efforts and the persistence of structural constraints in expanding non-hydrocarbon export markets.

From 2015 to 2020, the sector showed more promising dynamics. While export values still ranged between 1.39 and 2.24 billion USD, the ratio to total exports increased markedly, rising from 4.29% in 2015 to 8.73% in 2020. This shift was less the result of a large surge in non-hydrocarbon exports and more a reflection of declining hydrocarbon export revenues due to lower global oil prices, which made the non-hydrocarbon share relatively larger.

The period from 2021 to 2023 marked a significant impetus in non-hydrocarbon exports, with the values exceeding 4 billion USD in 2021 and recording a peak of around 6 billion USD in 2022. The ratio also recorded unprecedented levels, peaking at 11.85% in 2021 before easing to around 9% in 2023. The increase is suspected to mirror targeted measures for diversification along with improved competitiveness in specific sectors of export and good international market conditions.

Generally speaking, the data reveal a long-term upward trend in both the absolute values and share of non-hydrocarbon exports in Algeria's trade structure. However, growth has been bumpy, with substantial strides being made only recently. While this advancement is a welcome turn of events, further efforts are needed to sustain growth in high-value non-hydrocarbon industries, achieve better access for exports, and wean the country away from its heavy reliance on hydrocarbons.

3. Assessing the Impact of Small and Medium Enterprises on Non-Hydrocarbon Exports in Algeria (2002–2023)

This part focuses on the contributions made by small and medium-sized enterprises (SMEs) to the enhancement of Algeria's non-hydrocarbon export performance during the years from 2002 to 2023. SMEs are instrumental in product diversification, innovation, and the attainment of niche international markets. This section will also investigate the favorable or unfriendly institutional and policy frameworks concerning SMEs. This analysis pinpoints both potential and limitations on SMEs for export growth while articulating their strategic importance for sustainable economic diversification.

Table 03. Non-Hydrocarbon Exports and Number of SMEs in Algeria, 2002–2023

Year	Non-Hydrocarbon Exports Billion USD	Number of SMEs
2002	0.61	261853
2003	0.472	288577
2004	0.67	312959
2005	0.74	342788
2006	1.13	376767
2007	0.98	410959
2008	1.395	519526
2009	0.771	570838
2010	0.969	616072
2011	1.227	659336
2012	1.153	711836
2013	1.05	748481
2014	1.66	820738
2015	1.48	896811
2016	1.39	1014075
2017	1.36	1060289
2018	2.24	1093170

2019	2.07	1171945
2020	1.91	1209491
2021	4.57	1267220
2022	5.98	1300115
2023	5.05	1320664

Source: Statistics of the Bank of Algeria 2002–2023

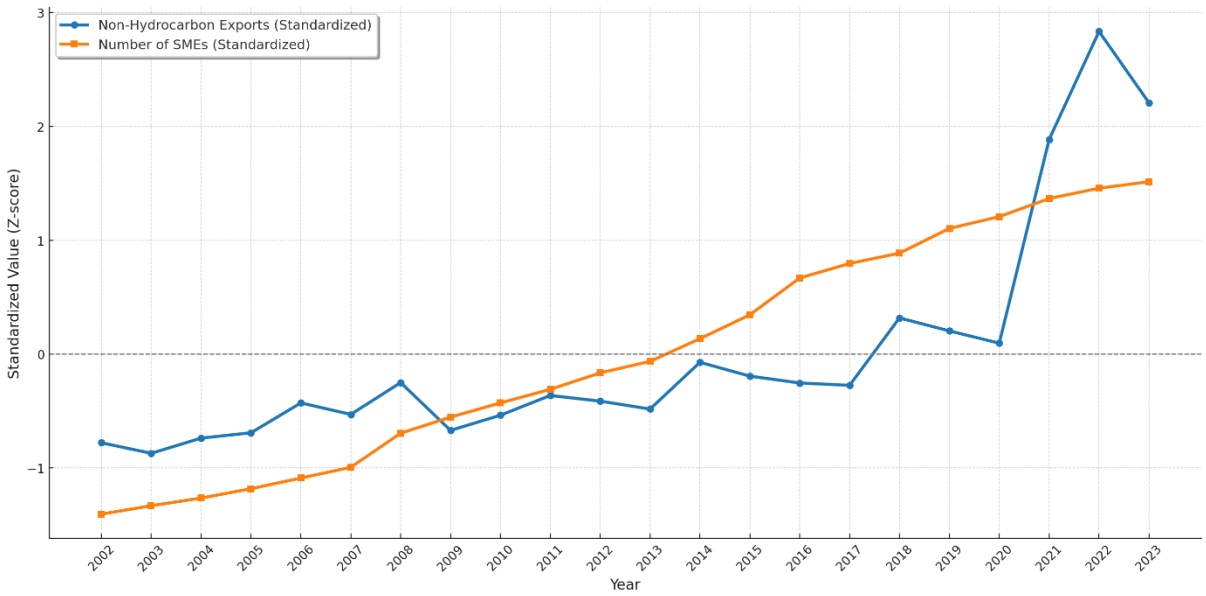
Between 2002 and 2023, Algeria witnessed a steady and significant growth in small and medium enterprises (SMEs), indicating the important role played by this sector within the national economy. The estimated number of SMEs was around 261,853 in 2002, growing steadily until overtaking one million in 2016 and further expanding to 1,320,664 by 2023. The annual growth rates fluctuated: upsurges were recorded in some years, including 2008 at 26.4% and sustained expansions from 2014-2019 which coincided with government programs aimed at the promotion of entrepreneurship and industrial diversification. Even during periods of economic slowdown, the SME sector maintained positive growth, indicating resilience and an expanding entrepreneurial base. This upward trend underscores the sector's potential as a key driver of non-hydrocarbon economic activity and export development in Algeria.

Temporal Analysis Using Normalized Trends

Figure 03 presents the standardized values of non-hydrocarbon exports and the number of SMEs in Algeria over the period 2002–2023. Standardization allows for a direct comparison between the two variables, highlighting their relative changes and potential correlations over time. This visual representation facilitates the identification of parallel trends, divergences, and periods of accelerated growth, offering a clearer understanding of the relationship between SME expansion and export performance.

Figure 03. standardized value of Non-Hydrocarbon Exports and SMEs Number in Algeria During 2002-2023

Source: Created by the authors using Python (Matplotlib), based on normalized data from 2002–2023.



From 2002 to 2008, both non-hydrocarbon exports and the number of SMEs were generally below their historical averages when standardized. The number of SMEs showed a consistent upward climb, reflecting gradual

expansion of the sector. In contrast, exports fluctuated more sharply, with noticeable dips in 2003 and again in 2009, illustrating the vulnerability of export performance to external market conditions.

Between 2009 and 2015, SME growth continued steadily, surpassing the historical mean and maintaining a stable positive trend. Non-hydrocarbon exports, however, experienced mixed performance, recovering somewhat after 2009 but remaining relatively close to their long-term average. This period indicates that, while the SME base was expanding, it did not always translate into proportional gains in export performance.

SMEs have historically crossed their average from 2016 to 2023, signifying the support for the sector on a policy and investment basis. The non-hydrocarbon exports had tremendous growth during 2021 and 2022, far exceeding their long-term averages. This export performance indicates some exceptional export performance due to potential reasons of dynamic international demand, improved trade facilitation, or through targeted diversification policies. However, such export growth was, in fact, not only far more volatile than the growth of SMEs, which stresses the fact that growth in SMEs does not automatically translate into corresponding consistent growth in exports.

From a comparison perspective, the analysis indicates that SME growth is smooth and stable, while non-hydrocarbon export growth is said to have a high level of volatility and high sensitivity to external factors. During periods of time, both series developed in the same general upward direction, but short-term movements did not always align, thereby indicating the breadth of external market forces that act beyond the narrow definition of SME growth.

Regression Analysis

A regression analysis was carried out using logarithmic transformation for the SME variable to assess the relationship between SMEs and Algeria's non-hydrocarbon exports. The statistical analysis here tries to explain to which extent the variations in SME numbers caused changes in performance on exports in the study period. The results, summarized in the following table, provide key indicators offering insights into the strength and significance of the relationship.

Table 04. Regression Results

Statistical Test	Result
R square	0,475
R square Adjusted	0,44
Constant	-23,936
Log (Number of SMEs) Coefficient	1,9137
P value	0,00038

Source: Prepared by the authors based on SPSS output.

The logarithmic regression model suggests a positive and statistically significant relationship between the number of SMEs and non-hydrocarbon exports in Algeria from 2002 to 2023. The R-squared value of 0.475 means that about 47.5% of the variation in non-hydrocarbon exports is explained by the logarithm of the number of SMEs. The positive coefficient (1.9137) indicates that as the number of SMEs increases, exports also increase — but the logarithmic nature means the growth rate of exports slows as SME numbers get very large. This supports the idea that while expanding the SME sector boosts export performance, the marginal impact decreases at higher SME counts

Results and Discussion

The evolution of Algeria's trade balance from 2000 to 2023 reflects both the opportunities and structural vulnerabilities identified in the literature on SME and export development.

From 2000 to 2008, Algeria's trade surpluses were large and sustained, with trade coverage ratios above 175% and a peak of 264.7% in 2006. This period mirrors the hydrocarbon dependency pattern highlighted by Akighir and Joseph (2019), where non-oil exports contribute only marginally to overall trade performance despite their potential economic benefits. Non-hydrocarbon exports remained low in value and share, indicating limited integration of SMEs into international markets, consistent with Christensen's (1991) observation that structural constraints hinder SME internationalization in resource-dependent economies.

The period from 2009 to 2014 was characterized by volatility following the global financial crisis, with export revenues diminishing severely in 2009 and the trade balance nearly reaching equilibrium by 2014. This trend corroborates Khattak et al.'s (2011) and Stouraitis et al.'s (2017) findings that SMEs in developing economies are especially vulnerable to external shocks, often owing to limited export readiness and internal capacity constraints. Although SMEs gradually emerged during this phase, the development of non-hydrocarbon exports remained quite modest, indicating the need for stronger institutional support, as emphasized by Lopez Gonzalez and Sorescu (2019) and Duval and Utoktham (2014).

Between 2015 and 2020, the freefall of oil prices saw persistent trade deficits with trade coverage ratios falling to as low as 59.28% in 2016. In line with Qobuljon's (2024) argument, targeted government support is essential for enabling SMEs to offset hydrocarbon revenue losses via export diversification. The aforementioned Hoivicky impacts since he cites mixed accounts in terms of SMEs and oil prices. Although SME numbers increased substantially during this period, the limited rise in non-hydrocarbon exports suggests that SME expansion alone is insufficient without complementary measures such as access to finance (Jinjarak, Mutuc, & Wignaraja, 2016; El-Said, Al-Said, & Zaki, 2015) and improved trade facilitation.

The 2021–2023 period illustrates the potential for SMEs to contribute to export diversification when external conditions and policy align. Non-hydrocarbon exports rose sharply in 2021 and 2022, reaching unprecedented levels both in value and as a share of total exports. This mirrors the "learning-by-exporting" effect described by Gkypali, Love, and Roper (2021), where sustained participation in export markets can enhance SME capabilities and competitiveness. It also resonates with the findings of Revindo, Gan, and Hambali (2024) that government assistance, combined with firm-level characteristics such as scale and experience, boosts export intensity.

The standardized (Z-score) comparison of SME numbers and non-hydrocarbon exports underscores the stability of SME growth versus the volatility of export performance, an asymmetry that aligns with Safari and Saleh's (2020) resource-based view, which stresses that capabilities, innovation, and market linkages mediate the SME–export relationship.

The econometric results further confirm the literature's position on SMEs as important drivers of export diversification. The positive and statistically significant coefficient in the log-linear regression supports Petrunenko et al. (2022) and Piratheesan (2019), who found that SME expansion correlates with broader economic growth and export potential. However, the diminishing marginal returns implied by the logarithmic model suggest that policy focus should shift from purely increasing SME numbers to enhancing their productivity, market access, and export readiness.

Overall, the findings reinforce the consensus in the literature that SMEs can make a substantial contribution to non-oil export growth in developing economies. However, as the Algerian case shows, this contribution is contingent upon enabling conditions such as financial access, trade facilitation, innovation capacity, and policy alignment, factors consistently emphasized across empirical studies in both African and Asian contexts.

Conclusion

The present study set out to examine the contribution of Small and Medium-sized Enterprises (SMEs) to Algeria's non-oil exports over the period 2000–2023, using a combination of descriptive trade analysis and econometric modeling. The results provide empirical evidence of a positive and statistically significant relationship between SME development and non-hydrocarbon export performance, confirming much of the theoretical and empirical literature that positions SMEs as key agents of export diversification and economic resilience. The analysis further reveals that while SME growth in Algeria has been steady and sustained, its translation into export gains has been less consistent, with significant surges occurring only when favorable external market conditions and supportive policies coincided.

With these findings, the case made by Qobuljon (2024), Revindo, Gan, and Hambali (2024), and Safari and Saleh (2020) that export growth spearheaded by SME is not automatic; rather, it is contingent upon such factors as access to finance, trade facilitation, innovation capacity, and institutional support becomes more convincing. The fluctuations of Algeria's non-oil exports relative to the constant growth of SMEs indicate that internal and international barriers continue to restrict the achievement of this sector's complete export range. Hence, policy measures need to extend beyond the increasing number of SMEs to focusing on building their competitiveness, promoting sectoral specialization, and integrating them into global value chains.

This particular study brings to bear not only its merits but several limitations as well. First, it relied on aggregate national data that fails to account for performance variations across industries, regions, or by firm size within the SME sector. Second, it based its analysis on the presence or absence of the correlation between SMEs and export values, failing to capture qualitative aspects such as innovation levels, market diversification, or technological sophistication. Thirdly, this study has not fully controlled for macroeconomic variables such as exchange rates, trade policy changes, or global demand shocks that might simultaneously affect SME growth and export performance. These caveats mean the estimated relationship must be interpreted more as indicative than definitive and warrants deeper investigation.

Future research could address these limitations by incorporating firm-level or sector-specific data to capture heterogeneity in SME export performance. Employing panel data methods could allow for a more nuanced understanding of how SME characteristics, such as size, age, ownership structure, and innovation capacity, interact with export outcomes over time. Moreover, comparative studies with other hydrocarbon-dependent economies could help contextualize Algeria's experience within broader structural and policy frameworks. Finally, future work could integrate macroeconomic and institutional variables into the regression framework to assess how the enabling environment mediates the SME–export nexus.

In conclusion, the Algerian case illustrates both the potential and the challenges of leveraging SMEs for export diversification. While SMEs can play a transformative role in reducing hydrocarbon dependency, realizing this potential requires a targeted policy mix that addresses structural bottlenecks, fosters competitive capabilities, and sustains market access in an increasingly volatile global trade environment.

References

1. Abuhatab, A. (2023). The role of micro, small and medium size enterprises (MSMEs) in economic growth – Does it matter? *Jadara Journal for Studies and Research*, 9(2), 1–24. https://doi.org/10.54161/jrs.v9i2.223
2. Akighir, D. T., & Joseph, T. A. (2019). Non-oil exports and economic growth in selected African countries. *International Journal of Scientific and Research Publications*, 9(6), p90130. https://doi.org/10.29322/IJSRP.9.06.2019.p90130
3. Batrancea, L. (2022). Determinants of economic growth across the European Union: A panel data analysis on small and medium enterprises. *Sustainability*, 14(8), 4797. https://doi.org/10.3390/su14084797

4. Calheiros-Lobo, N., Vasconcelos Ferreira, J., & Au-Yong-Oliveira, M. (2023). SME internationalization and export performance: A systematic review with bibliometric analysis. *Sustainability*, 15(11), 8473. https://doi.org/10.3390/su15118473
5. Christensen, P. (1991). The small and medium sized exporters' squeeze: Empirical evidence and model reflections. *Entrepreneurship & Regional Development*, 3(1), 49–65. https://doi.org/10.1080/08985629100000004
6. Duval, Y., & Utoktham, C. (2014). *Enabling participation of SMEs in international trade and production networks: Trade facilitation, trade finance and communication technology* (ARTNeT Working Paper Series No. 146). UN ESCAP. https://hdl.handle.net/10419/145382
7. El-Said, H., Al-Said, M., & Zaki, C. (2015). *Trade and access to finance of SMEs: Is there a nexus?* (Working Paper No. 903). Economic Research Forum. https://erf.org.eg/app/uploads/2015/12/903.pdf
8. Gkypali, A., Love, J. H., & Roper, S. (2021). Export status and SME productivity: Learning-to-export versus learning-by-exporting. *Journal of Business Research*, 128, 486–498. https://doi.org/10.1016/j.jbusres.2021.02.026
9. Jinjarak, Y., Mutuc, P. J., & Wignaraja, G. (2016). SME finance and trade at the firm-level: Evidence from the People's Republic of China and ASEAN economies. In G. Wignaraja (Ed.), *Production Networks and Enterprises in East Asia* (pp. 229–256). Springer. https://doi.org/10.1007/978-4-431-55498-1_11
10. Juminawati, S., Hamid, A., Amalia, E., Mufraini, M. A., & Mulazid, A. S. (2021). The effect of micro, small and medium enterprises on economic growth. *BIRCI Journal*, 4(3), 5697–5704. https://doi.org/10.33258/birci.v4i3.2368
11. Khattak, J. K., Arslan, M., & Umair, M. (2011). SMEs' export problems in Pakistan. *E3 Journal of Business Management and Economics*, 2(5), 192–199. https://e3journals.org/cms/articles/1330778191_Jamshed%20%20et%20al.pdf
12. Koghuashvili, P., & Koridze, N. (2022). The importance of small and medium-sized business for the country's economy. *Ekonomika*, 105(4–5), 67–78. https://doi.org/10.36962/ecs105/4-5/2022-67
13. Lê, N. T. T. (2022). Effects of exports on the growth of small and medium enterprises – empirical evidence from Vietnam. *Journal of Economics, Law and Management*, 6(2), 2774–2786. https://doi.org/10.32508/stdjelm.v6i2.989
14. Lopez González, J., & Sorescu, S. (2019). *Helping SMEs internationalise through trade facilitation* (OECD Trade Policy Paper No. 229). OECD. https://doi.org/10.1787/2050e6b0-en
15. Małecka, J. (2017). *The role of SMEs in international trade: Selected aspects* (Working Paper No. 68/2017). Institute of Economic Research. https://www.econstor.eu/bitstream/10419/219891/1/ier-wp-2017-068.pdf
16. Morales Pedraza, J. (2021). The micro, small, and medium-sized enterprises and its role in the economic development of a country. *Business and Management Research*, 10(1), 33–59. https://doi.org/10.5430/bmr.v10n1p33
17. Muthuraman, S. (2020). Economic development through small & medium enterprise – A conceptual framework. In *Proceedings of the 3rd International Conference on Business, Management and Economics*. https://doi.org/10.33422/3rd.icbme.2020.03.24
18. Oluremi, D. O., & Maku, O. A. (2024). Small and medium scale enterprises and Nigeria economic growth. *International Journal of Small Business and Entrepreneurship Research*, 12(5), 71–89. https://doi.org/10.37745/ijsber.2013/vol12n57189
19. Petrunenko, I., Khmarska, I., Tkachenko, T., Koptieva, H., & Komandrovska, V. Ye. (2022). Importance of small and medium enterprises in the economic development of Eastern Europe. *Estudios de Economía Aplicada*, 40(2), Article 6204. https://doi.org/10.25115/eea.v40i2.6204
20. Piratheesan, S. (2019). The role of small and medium enterprises in regional development: Special reference to Jaffna Divisional Secretariat. In *AIRC 2020 Proceedings* (pp. 133–137). South Eastern University of Sri Lanka. http://ir.lib.seu.ac.lk/handle/123456789/4297
21. Qobuljon, X. M. (2024). The impact of small business and entrepreneurial entities on the country's export and import. *Qo'qon University Herald*, 12, 77–81. https://doi.org/10.54613/ku.v12i.994
22. Revindo, M. D., Gan, C., & Hambali, S. (2024). SMEs' export intensity: Enhancers, inhibitors and firm characteristics. *Journal of Small Business & Entrepreneurship*, 37(2), 267–293. https://doi.org/10.1080/08276331.2024.2321433
23. Safari, A., & Saleh, A. S. (2020). Key determinants of SMEs' export performance: A resource-based view and contingency theory approach using potential mediators. *Journal of Business & Industrial Marketing*, 35(4), 635–654. https://doi.org/10.1108/JBIM-11-2018-0324

24. Savlovschi, L. I., & Robu, N. R. (2011). The role of SMEs in modern economy. *Economia: Seria Management*, 14(1), 277–281. https://ideas.repec.org/a/rom/econmn/v14y2011i1p277-281.html
25. Stouraitis, V., Boonchoo, P., Harun, M. M., & Kyritsis, M. (2017). Entrepreneurial perceptions and bias of SME exporting opportunities for manufacturing exporters: A UK study. *Journal of Small Business and Enterprise Development*, 24(4), 906–927. https://doi.org/10.1108/JSBED-03-2017-0095
26. Vulić, S. (2021). Small and medium enterprises and economic growth. *Časopis za ekonomiju i tržišne komunikacije*, 22(2), 436–448. https://doi.org/10.7251/EMC2102436V
27. Wilkinson, T., & Brouthers, L. E. (2006). Trade promotion and SME export performance. *International Business Review*, 15(3), 233–252. https://doi.org/10.1016/j.ibusrev.2006.03.001
28. Zhang, L., & Xia, W. (2014). Integrating small and medium-sized enterprises into global trade flows: The case of China. In M. Jansen, M. Jallab, & M. Smeets (Eds.), *Connecting to Global Markets: Challenges and Opportunities—Case Studies Presented by WTO Chair-holders* (pp. 41–53). WTO. https://doi.org/10.30875/255a109c-en

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Privacy and the illusion of Cosmopolitan Culture in the Age of Digital Societies
Attempts to Critique Liquid Culture and Revitalize the Question of Infiltration

Hocine Messadi
Doctor
Laboratory of Sociology of Cultural Communication: Values-Practices-Representations Department of Media and Communication Sciences, Faculty of Humanities, Amar Telidji University
Algeria
E-mail: h.messadi@lagh-univ.dz ; Orcid: 0009-0006-1250-1373

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords cultural particularity, digital technology, digital societies, cosmopolitanism, liquid culture.

Abstract
This research paper addresses cultural particularity as a form of distinction and difference among peoples and societies. It argues that cultural particularity continues to face processes of penetration under the illusion of cosmopolitan culture, which in reality does not aim to embrace cultural diversity as much as it seeks to devour cultures in order to impose a single, hegemonic cultural vision. Despite the opportunities offered by digital technology to highlight cultural particularity, it simultaneously compels it to reshape itself according to a universal perspective in which the very notion of particularity dissolves. Within a critical framework, this paper discusses Zygmunt Bauman's concept of "liquid culture," attempting to strip down this notion and reveal that it is merely an extension of the cosmopolitan culture that spread at the end of the twentieth century. The study concludes that the cultural particularities of societies still resist the penetration imposed by digital technology, though their levels of resistance vary.

Citation. Mesadi H. (2025). Privacy and the illusion of Cosmopolitan Culture in the Age of Digital Societies Attempts to Critique Liquid Culture and Revitalize the Question of Infiltration. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 758–770. https://doi.org/10.56352/sei/8.11.59

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 08.02.2025 | Accepted: 29.07.2025 | Published: 08.09.2025 (available online)

Introduction

Culture is one of the most complex and multifaceted intellectual issues, where even the most astute mind stands bewildered before its labyrinths, often compelled to suspend its efforts to unravel its intricacies until time brings clarity. In recent decades, culture has undergone radical transformations due to the major technological shifts experienced worldwide. It has come to derive its values and meanings from the digital world, which has invaded our daily lives in an unprecedented way in human history. The digital dimension has thus become an inseparable part of the very essence of culture, posing a real threat to the previous meanings and values that still persist, to varying degrees, within cultural institutions in every nation.

With the accelerated development of digital technologies, humanity has entered a new chapter of transformation unlike any it had experienced before. This chapter has given rise to new forms of practices, relationships, and social,

cultural, economic, and political institutions, all built upon and centered around the digital space as their foundational structure.

The digital space has created new conditions that humanity has been compelled to accept, imposing requirements that have become indispensable for managing daily life. These conditions are gradually shaping a global cultural space that transcends traditional boundaries between different cultures. Accordingly, local cultures can only be present within its digital forms by either fully submitting to its conditions or adapting to them in ways that ensure their presence and preserve their continuity.

Nevertheless, it should not be overlooked that the digital space has provided greater opportunities for human communication and offered new possibilities that make the prospect of cultural coexistence more optimistic than in previous decades. In theory, all cultures, regardless of their backgrounds, are assumed to have equal access to this space and the ability to participate in shaping it. Yet in reality, practices of cultural domination persist, employing newly devised methods and increasingly sophisticated techniques. Under the dominance of a single culture whose proponents seek to impose it as a transcendent universal vision, the boundaries of national, religious, and subcultural identities become increasingly fragile, their cultural walls ever more susceptible to penetration.

It is true that the universal nature of digital spaces renders the existential meaning of any culture a digital one, such that only in this sense can it be active, dynamic, and capable of asserting its presence alongside other cultures. Yet reality does not reflect this cosmopolitan illusion of a global culture encompassing humanity in all its diversity, nor the false promises propagated by proponents of projects of peaceful coexistence among cultures.

If Zygmunt Bauman announced the dawn of a new era of global culture what he termed "liquid culture," centered on individual freedom of choice and built upon dazzling, enticing displays full of allure and temptations (Bauman, 2018, p. 21) then his project is nothing more than a continuation of the illusion propagated by globalization concerning a unified global culture. Rather, it represents yet another chapter in the ongoing threats and intrusions faced by local cultures under the pressures of digital globalization.

1- Methodological Considerations:

The central problem of this paper revolves around the impact of accelerated digital transformations on the cultural identity of peoples under the dominance of digital space, as well as the challenges local cultures face in maintaining their existence and continuity in the face of the phenomenon of "liquid culture" promoted by cosmopolitan thought in the age of digital globalization.

The objectives of this paper are to:

- Understand how culture transforms under digital technology and how this affects traditional values and meanings.
- Provide a critical reading of Zygmunt Bauman's notion of "liquid culture," showing how it represents a continuation of cultural hegemony in the age of digital globalization.
- Highlight how cultural domination continues to operate within digital space, despite promises of cultural coexistence.
- Analyze the illusion underlying the idea of a borderless global culture, showing that reality reflects cultural domination more than coexistence.

This paper employs both the critical and analytical approaches. The critical approach is used to provide a critical examination of Bauman's idea of "liquid culture," to deconstruct the cosmopolitan illusion promoted by digital space, and to highlight its contradictions with reality. The analytical approach is adopted to analyze the impact of digital technology on culture, and to examine how cultural values and meanings are transformed within the digital space.

3 -Cultural Particularity:

Although discussions on "cultural particularity" have receded in intellectual arenas during the postmodern era which has tended to move beyond the notions of collective identity and shared culture the entry of contemporary peoples into digital spaces has had profound consequences and implications for many aspects of life, including the cultural dimension. The issue no longer receives the same attention it did two decades ago. The digital environment has revived debates around culture, particularly concerning "cultural particularity" and the future of this concept, which is now more threatened than ever, especially in a digital world where almost all the particularities that historically distinguished the peoples of the world are at risk of dissolution.

Despite the prominent place of the concept of culture in intellectual debates throughout the past century especially among scholars engaged in social and anthropological studies there has been a noticeable presence of critics who opposed the concept of culture, questioned its depth, or even dismissed it altogether as unhelpful for addressing researchers' questions. Mathew Engelke (2020) identified a current of critics who undermined or ignored the significance of the concept, to the point that explicit attention to it, at least as an analytical term, declined in Britain for a long period. Interest in culture diminished significantly after the death of Malinowski, only to regain recognition later with the emergence of the Birmingham School, whose members Richard Hoggart, Raymond Williams, and Stuart Hall produced literary and social works that came to be known as "cultural studies" (Engelke, 2020, pp. 57–58).

Apart from this British approach that marginalized the concept within the academic field, culture has retained a central role across various disciplines of the humanities. In anthropology, this was evident in the works of Edward Tylor, James Frazer, Malinowski, and Claude Lévi-Strauss. In sociology, it featured prominently in the works of Pierre Bourdieu (Bourdieu, 1986). Even in media and critical studies, the Frankfurt School contributed through the works of Max Horkheimer, Theodor Adorno, and Herbert Marcuse, in what became known in their research as the "culture industry" (Horkheimer & Adorno, 2002, p. 94). Culture has been, and continues to be, the most essential and prominent component in defining the identity of peoples. Indeed, the importance of the cultural question is underscored by the impossibility of distinguishing between different peoples once culture is neutralized.

I- The Concept of Cultural Particularity:

In order to address the issue of cultural particularity, it is first necessary to define the concept of culture so that its meaning is clear in this context. Without delving into the complexities of definitions or the linguistic root of the word "culture," we adopt Edward B. Tylor's definition, which, in its broad ethnographic sense, refers to "that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society" (Edward, 1920, p. 01). In this broad sense, culture refers to a shared conception that we hold with others in understanding the world around us and in shaping forms of interaction with it. At the same time, it points to differences between one society and another, and from one nation to another.

Tylor's definition leads us to infer the implicit significance of particularity in the cultural question of every society and nation. Culture is inseparable from cultural particularity, as it is bound up with three interrelated dimensions: first, its determination by place; second, its permanence in time; and third, its tendency toward organization. This stands in sharp contrast to the view of Engelke (2020), who argues that the word "culture" is too vague to be of much analytical value when applied in practice.

The confusion encountered by Engelke and those who share his view stems from the absence of clear boundaries between "here" and "there," from its continual transformations throughout history, and from its lack of qualities such as consistency, coherence, and regularity. This confusion also derives from the postmodern knowledge paradigm, which rejected the essentialist view of things. According to Diana Fuss, essentialism means "a belief in the real, true essence of things, the invariable and fixed properties which define the 'whatness' of a given entity" (Fuss, 1989, p. xi). What happened with these thinkers is that they moved beyond the essence of culture and the essence of cultural particularity on the grounds that essences tend to freeze what is not by nature fixed, and to mold what is not by nature stable.

What has further complicated the issue of cultural particularity is the instability that constitutes a part of its very essence. It unites opposites within itself and reconciles contradictions within its structure. Among its features are:

a. Stability and Change:

One of the most important contradictory features embedded in the structure of cultural particularity is its ability to

embody both stability and change simultaneously. Its stability lies in its capacity to preserve the intrinsic characteristics accumulated throughout history, in harmony with its internal environment, through its interaction with cultural and social institutions that emerge from within it, and through its responsiveness to the political and economic events it has experienced. Its changeability, on the other hand, is manifested in the flexibility it demonstrates by adjusting certain of its forms and symbols, or by abandoning them altogether.

b. Interrelation and Differentiation:

Culture possesses considerable flexibility in interacting with surrounding cultures. It overlaps with them to the point where the contours of particularity nearly vanish, and yet it differentiates itself from them to such an extent that this distinction becomes the primary criterion for distinguishing among peoples and nations. For this reason, researchers studying cultures often focus on identifying their similarities and differences. This stems from the ability of cultures to draw from one another the tools of their continuity and the means of their adaptation, depending on the historical conditions imposed upon them. Interrelation and differentiation thus refer to the capacity of a culture to engage with other cultures by exchanging symbols, values, and cultural forms giving and receiving, inspiring and being inspired, exporting and importing, rejecting and localizing.

c. Particularity and Universality:

The concept of privacy, as defined by Warren and Brandeis in their 1890 study published in the *Harvard Law Review*, is "the right to be let alone" (Sale, 2017, p. 354). Each culture has its own characteristics that distinguish it from others, features that set it apart and grant it uniqueness. Particularity endows a culture with individuality, with the capacity to maintain distinctive features, to recognize its own essence and existence, to remain conscious of its historical and geographical conditions, and to preserve its ethical mission and value-laden heritage. Ultimately, particularity constitutes a civilizational asset belonging to a specific nation, but it is also, conversely, a human legacy that transcends historical and geographical boundaries. The more a culture distinguishes itself, elevates itself, and internalizes positive values and civilizational achievements, the more it inspires others, providing them with what they deem necessary for their survival and continuity. Thus, culture embodies both particularity and universality.

This ability of culture to unite contradictions is what has led some to reject considering it as a central concept in the study of societies. Yet distinguishing between these overlapping contradictions within its structure is essential to forming a clearer conception of it. In this sense, culture is both a particular civilizational given and a shared universal legacy.

II. Dimensions of Global Cultural Flow:

Arjun Appadurai argues that the new system of cultural economy is complex, overlapping, and fragmented at the same time. It can no longer be understood through the traditional models of center and periphery, migration theory, surplus and deficit (as in classical trade balance models), or consumers and producers (as in most neo-Marxist development theories), nor even through the more sophisticated and flexible theories of global development. The complexity of the current global economy, he maintains, is linked to certain fundamental disjunctions between economy, culture, and politics, which we have only recently begun to examine theoretically (Appadurai, 1996, p. 32).

> To explore such disjunctions, Appadurai proposes examining five dimensions of global cultural flows, which he calls: (a) the ethnoscape, (b) the technoscape, (c) the financescape, (d) the mediascape, and (e) the ideoscape.
>
> The relationships among these dimensions are not uniform or symmetrical from all perspectives. Rather, they are deeply conceptual, influenced by the historical, linguistic, and political conditions of various actors: nation-states, multinational corporations, diasporic communities, as well as subnational groups and movements (religious, political, or economic), and face-to-face social groups such as villages, neighborhoods, and families. The individual, meanwhile, is the least influential actor within the movement of culture, since cultural flows are ultimately managed by agents who control their pathways. The individual's culture constitutes merely a representation of this broader flow.
>
> The **ethnoscape** refers to the people who shape the changing world in which we live: tourists, immigrants, refugees, exiles, guest workers, and other mobile groups and individuals who have become a defining feature of contemporary life. These populations appear to influence state policies and the relations among states than ever before. This dimension, as Appadurai notes, arises from globalization, which has undermined the sovereignty of nation-states and dismantled the geographical fortresses that had protected national identity and safeguarded it for two centuries (Bauman, 2018, p. 67). With the shifting needs of international capital, the demands of

production and technology, and changes in state policies toward refugees, a new kind of "liquid" societies has emerged, surpassing the rigid notions of solid nation-states (Messaadi, 2024).

The **technoscape** refers to the constantly shifting global configuration of technology, whether high or low, mechanical or informational, moving now at high speed across boundaries that were once impermeable. Many countries now serve as roots for multinational corporations. For example, a massive steel complex in Libya may involve interests from India, China, Russia, and Japan, each providing components of new technological formations. The unusual distribution of technologies, and hence the characteristics of this dimension, are increasingly driven not by clear economies of scale, political control, or market rationality, but rather by the increasingly complex relationships between capital flows, political opportunities, and the availability of labor particularly skilled technical labor in which investing countries seek to harness digital technology.

The **financescape**, in Appadurai's terms, refers to the unprecedentedly rapid flows of capital, currency, and investment, which he sees as increasingly detached from territorial anchors. The interrelation among the first three dimensions is unpredictable, each shaped by its own constraints and motivations, but each at the same time serving as both a limitation on and a measure of the movement of the others.

The **mediascape** points to the distribution of electronic capabilities for producing and disseminating information newspapers, magazines, television stations, film production studios which are now accessible to an ever-growing number of public and private actors worldwide, as well as to the images of the world these media produce. Such images involve complex distortions depending on their style (documentary or entertainment), medium (electronic or pre-electronic), audience (local, national, or transnational), and the interests of their owners and controllers. The most significant aspect of this mediascape is its ability to provide vast and complex repertoires of images and narratives in which the world of commodities becomes deeply intertwined with that of news and politics. This flow produces image-centered narratives that shape perceptions of reality, creating stories about the "Other," initial narratives of possible lives, and imaginaries that may serve as a prelude to desires for appropriation and movement.

The **ideoscape** refers to the flow of ideas, ideologies, and counter-ideologies, along with mental images such as freedom and democracy, which are often modified and manipulated according to context. These are sets of ideological images, often directly political, explicitly aimed at seizing state power or parts of it. The ideoscape consists of clusters of ideas reflecting Enlightenment ideals on a global scale. Actors seeking to impose their intellectual hegemony and political vision do so by attempting to guide the movement of thought, seeking to dominate intellectual debate within the public sphere, given the intimate link between thought, reading, and the public domain (Appadurai, 1996, p. 33).

In truth, we find many real-world examples that confirm Appadurai's observations on the dimensions of cultural flow. Yet, in the digital age, these flows increasingly take the form of reinforcing cultural unidirectionality. Digital technology has managed to fuse and reshape many of these dimensions, deploying algorithms within an industrial-economic framework of culture. The technical properties of digital technology have granted unprecedented power to control the pathways of human mobility, technology, capital, media, and ideas.

III. Digital Technology and the Power of Penetration:

From the earliest foundational ideas of modernity, Western thought became aware of the capacity of technology to bring about a qualitative leap in the fields of capital and wealth production, as well as in improving the quality of social, political, and economic life. Hence, their efforts were concentrated on developing scientific knowledge directed toward advancing technology a project heavily endorsed by the major philosophers of Western modernity, who placed great hopes on this kind of knowledge as a means for humanity to achieve wealth and mastery over nature, as emphasized by Francis Bacon (Bacon, 1900, p. 470).

What stands out most in the nature of technology is its ability to standardize practices. It not only determines the ways of doing things and ways of being in the world, but also shapes the ways of carrying out abstract activities detached from concrete contexts. Real and unique practices, such as methods of baking bread, may vary from one place to another depending on circumstances, customs, and tastes. What technology such as the automated bread-making machine does is to facilitate a routine task that is not tied to a specific place. It is a routine that can be performed anywhere in the world because it is abstract in nature. The absence of standardization at lower levels undermines the foundations of technology, since standardization is its essence. It requires the abstraction of the

inherent plurality that characterizes human practices and tangible situations. This is precisely the distinction often made between tools and technologies: tools are employed in practices that are locally specific and distinctive, while technologies are concerned with more general practices regardless of local particularities (Barney, 2015, p. 64).

From here arose the interest in technology, culminating in the digital transformation that we are now experiencing. Capitalist powers realized the pivotal role of culture in shaping people's opinions, orientations, and attitudes, and its significant influence on directing consumer behavior. This, in turn, would positively affect the revenues of major capitalists if they succeeded in controlling the sources of cultural production. For this reason, multinational corporations entered the cultural field and secured leading positions among the producers and promoters of culture—naturally aligning it with their own interests and agendas.

Thus, thanks to its unique features, digital technology has managed to deeply penetrate every domain of life, imposing new and varied forms of relationships. In recent years, with the Internet and other information technologies, transformations have affected fundamental aspects of life: we no longer play or work as before; our modes of communication and consumption have changed; our methods of knowledge creation and learning have shifted; even our understanding of politics and participation in public life is no longer the same (Trend, 2001, p. 1).

5- Culture and the Illusion of Cosmopolitanism in Digital Societies:

> "There is no single human civilization, but rather multiple civilizations" (Mattelart, 2008, p. 20). Yet, as mentioned earlier, culture is defined by two existentially inseparable traits: the tendency to return to its roots through its deep connection to heritage and the past, and its capacity to open up to the world in order to adapt to contemporary conditions. However, with technology permeating human life and communications globalization taking on a cosmopolitan character, the trait of openness and forward orientation has overshadowed the trait of closure and return to the past. This situation has revived the problem of cultural particularity, which is now more threatened than ever in favor of a cosmopolitan culture, in a world whose spaces are almost entirely digital.
>
> Cosmopolitanism is a humanist orientation that advocates making the world one unified homeland for all humanity. Under the umbrella of global citizenship, its proponents reject the notions of the nation-state. According to Martha Nussbaum, cosmopolitanism does not mean that its adherents propose abolishing local and national forms of political organization in favor of a world state; rather, their view was more radical: we must not give our primary allegiance to any form of government or temporal authority, but to the moral community composed of the humanity of all people (Nussbaum, 1996, p. 7).

For cosmopolitans, cultural particularity constitutes a real obstacle to the realization of global citizenship. All cosmopolitans are compelled not to act in accordance with the dictates of local cultures or national expectations when these values and behaviors conflict with universal standards of human conduct (Nussbaum, 1997, pp. 8–14). Local cultures are thus acknowledged only insofar as they contain universal values shared by all peoples. In this way, a hybrid culture is formed, where the cultures of nations intersect within unified values, and individuals, as Samuel Scheffler explains, achieve self-realization and flourishing by shaping identities with distinctive features derived from diverse and heterogeneous cultural sources. These are not regarded as being defined by descriptive ties to a particular culture, community, or heritage (Scheffler, 1999).

It is notable that cosmopolitan culture gained significant traction and wide dissemination during the last decade of the twentieth century, a period marked by the rise of concepts of freedom and democracy, the decline of socialist slogans, and, at the same time, the globalization of communications and media. Media, in particular, became a key vehicle in promoting cosmopolitan cultural values and standards. Paul Hopper (2007, p. 62) points out that the globalization of media was further intensified by the rise of giant multimedia corporations such as Disney, Sony, Bertelsmann, General Electric, News Corporation, Warner Media, and Viacom. The concentration of ownership of these corporations in the hands of a few conglomerates enabled them to dominate entertainment industries by controlling financing, production, marketing, and distribution of their film and television products.

It is important not to conflate the globalization of cultural industries with what might be called global culture (Wolton, 2005, p. 46). The culture disseminated by these global corporations is, in reality, a mosaic of cultures that have absorbed elements of modernity, a scattered patchwork of cultural fragments. The primary beneficiaries of exporting this cultural product worldwide are, of course, the owners of these massive media corporations. What they produce cannot, in any sense, be described as global culture, but rather as the globalization of cultural industries.

The digital transformations of the last two decades have added another, more pronounced and complex, dimension to the concept of cosmopolitan hegemony. The practices dominating the global cultural scene in the digital age reflect only a set of values and principles that transcend those upon which human cultural communities across the world were historically based. Thus, cosmopolitanism, in the end, is nothing more than the ideology of "the elites," who themselves, as Dominique Wolton notes, are firmly rooted in strong, well-defined identities (Wolton, 2005, p. 50). The term "cosmopolitan culture," even if it has receded in academic writings over the last two decades in favor of the notion of "liquid culture," does not significantly differ from it in either conceptual or ideological content.

The term "cosmopolitanism" emerged simultaneously with the spread of digital media, just as the concept of "liquid culture" appeared with the globalization of media two decades earlier. From another perspective, if digital media is nothing but a technical extension of media globalization, then the notion of liquid culture is merely an extension of cosmopolitan culture—if not the very same concept under a different label.

6- Liquid Culture or Penetrated Culture?

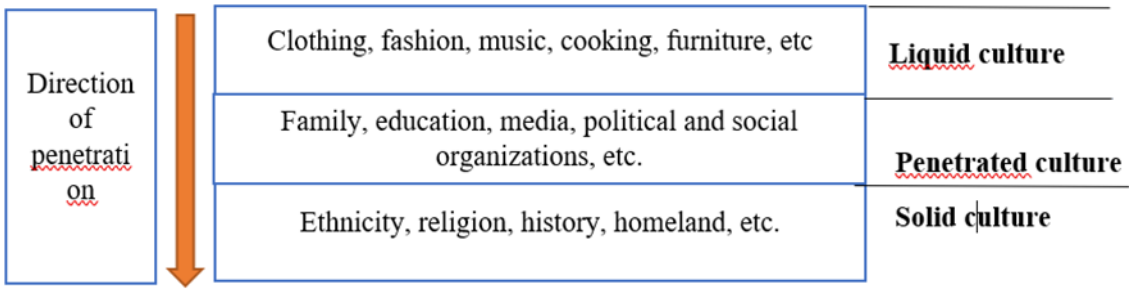
To describe the condition into which culture has devolved in contemporary societies, Zygmunt Bauman used the term "liquid modernity," referring to a state in which no form of social life is able to retain its shape for long just like liquids. In this state, culture takes shape in accordance with individual freedom of choice and the individual responsibility that accompanies it. Its function becomes the continuous maintenance of this choice as both a vital necessity and an inevitable duty (Bauman, 2018, p. 19).

In Bauman's formulation, culture no longer exercises any supervisory or disciplinary role; it is no longer the functional complex that once contained mechanisms for preserving stability, balance, and direction. Culture has suffered profound fractures, and societies have entered into a condition where "cultural identities" and "cultural particularities" are dissolving. If Friedrich Nietzsche once proclaimed the "death of God," then Bauman, in turn, proclaimed the "death of particularity" (Bauman, 2017, p. 43). This, he argues, is the outcome of contemporary societies becoming digital societies, where individuals themselves voluntarily lead their cultural even personal particularities to the "slaughterhouses" of the digital spaces, sacrificing them to its allure.

Bauman's description of contemporary societies as "liquid societies" appears to be an extreme characterization. If we view it as a product of a pessimistic anticipatory vision, then it is an exaggeration of pessimism. He paints an overarching picture of societies, with all their institutions, systems, standards, and values, sinking into boundless liquidity. For him, the dissolution of all that is solid is the essential feature of the modern form of life from its inception. Nothing is exempt from this process, not even the most solid forms, including those rooted in the historical foundations of societies.

At the very least, this view creates an unsound equivalence among different cultural institutions upon which societies have been built. In his account, there is no distinction between music, prayer, fashion, religion, cinema, or houses of worship. All are thrown into the same blender, all subjected to dissolution and fusion, until they take on liquid forms, blending with one another, and their symbols and meanings merging to the point of indistinguishability. This is an overstated portrayal, for what Bauman's thesis neglects is that culture has historically formed in layers some harder and more resistant to penetration or reshaping, others more flexible and quickly subject to change and dissolution.

Figure (01): illustrates the layers of culture and the direction of penetration.


Direction of penetration
Clothing, fashion, music, cooking, furniture, etc
Family, education, media, political and social organizations, etc.
Ethnicity, religion, history, homeland, etc.
Liquid culture
Penetrated culture
Solid culture

Source: by the researcher

1- Liquid Culture:

If we are to apply the metaphor of liquidity to any layer of culture or to one of its symbols, it would undoubtedly apply to the first layer of culture—namely, the manifestations of daily life shaped by market values and excessive consumption. These are reflected in clothing, fashion, music, cuisine, furniture, and so forth. Such daily practices appear almost uniform across much of the world's populations. McDonald's meals, Adidas clothing, Chanel perfumes, Samsung phones, and similar global brands have penetrated nearly all markets, becoming present in every country and accessible to many peoples, thereby blending into the cultural lives of numerous societies.

Yet, many societies still maintain their cultural identities in clothing styles, culinary traditions, musical genres, architectural methods, and furnishing practices. In these everyday manifestations, cultural differences remain evident, with many communities continuing to uphold traditions deeply rooted in history.

Bauman's inability to recognize these cultural differences stems from the Western centrality underlying his perspective, which obscures the stark contrasts between Western culture submerged in its liquid form and other cultures that have retained a more solid character. Societies of the southern Mediterranean, for instance, continue to preserve their musical traditions and wear wool and camel hair garments. Gulf communities remain faithful to the white thobe and red-checkered headscarf. Many East Asian societies still uphold authentic cultural practices, such as serving meals with bamboo chopsticks rather than metal spoons, and favoring traditional rice and fish dishes over hamburgers and McDonald's meals. Thus, we argue that if liquid culture has achieved any success, it is largely confined to the superficial and external layer of many societies' cultures. This interpretation is reinforced by Bauman himself in *Liquid Culture*, where he focused more on music, fashion, and art (Bauman, 2018, p. 25) than on the institutions that sustain them.

Indeed, there is a powerful process of cultural penetration being advanced by global economic interests seeking to impose a universal culture of their own making. However, the cultural practices encouraged by technology and promoted by digital media cannot be attributed to deeply rooted social and cultural institutions. Rather, they are practices that are quick to be adopted and just as quick to dissolve. They are contagious and spread rapidly thanks to media and global digital communications. If they are to be linked to any institutional or value-based foundation, it is only to those institutions dominated by the forces controlling the flows of capital and the global economy. In the end, liquid culture is nothing more than the product of an imperial cultural industry, the result of a pragmatic vision ultimately governed, paradoxically, by a solid hegemonic culture that resists liquefaction and dissolution.

2- Penetrated Culture:

We must first acknowledge that major institutions and corporations controlling cultural industries have succeeded in commodifying many cultural symbols, and we must also recognize that they have managed to dissolve numerous cultural practices. Yet, in contrast, these achievements continue to face considerable resistance supported by older social and cultural institutions. Families, education systems, political parties, and various social and political organizations in many societies and countries around the world remain vital, preserving the functional roles entrusted to them. Despite the fierce campaigns of penetration targeting institutions rooted in modernity and pre-modernity, these institutions still endure today, continuing to perform their functions effectively within many societies.

Although contemporary societies are undergoing profound transformations due to the digital revolution, preexisting values and biases—deeply embedded in broader social and cultural systems are reflected in the digital structure of platforms, and may even be amplified through them (Yue Qian, 2024). For this reason, some have argued that the consequences of computers themselves are no greater than those brought about by literacy. Conversely, figures like Goody and Kittler contend that the use of a new communication medium may indeed alter people's views of the world, at least in the long run (Asa Briggs, 2009).

This long-term effect is nothing but a form of penetration exerted by digital technology upon social and cultural institutions still tasked with preserving and revitalizing cultural particularity. Institutions such as the family, the arts, houses of worship, local media, and diverse social and political organizations all represent subsidiary authorities that operate in a functional harmony to regulate social practices and safeguard particularity from cultural intrusion and deviation. Because these institutions are mutually coherent and functionally interconnected, their cohesion has created a cultural wall that protects the cultural body against every attempt at penetration. The endurance of these

institutions and their resistance to rapid change is due to the culture's ongoing efforts to confront and withstand the various forms of infiltration imposed upon it by digital technologies.

3- Solid Culture:

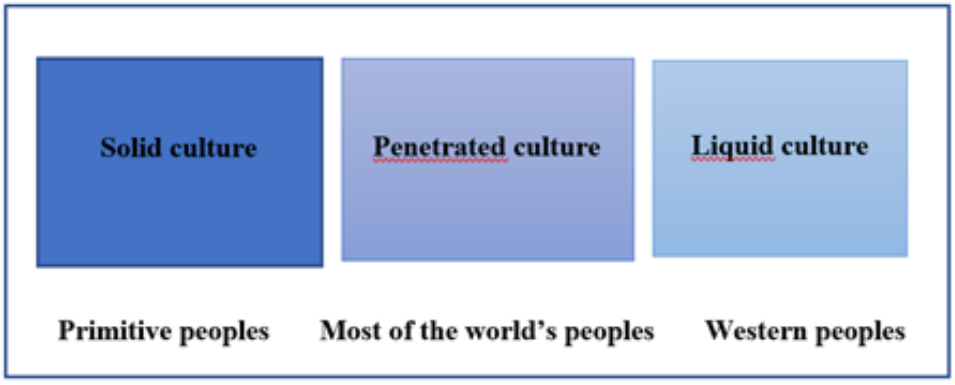
If institutions such as the family, the arts, houses of worship, local media, and various social and political organizations serve as the reservoirs where each society's cultural values are deposited, then religion, ethnicity, homeland, and shared history—accumulating experiences across time—are the great factories that generate values and from which societies derive their cultural identity. For this reason, the ultimate target of the penetrative attempts against cultural particularities has been these solid institutions, through efforts to disable their capacity to produce living values and generate meaning.

The persistence of religion, ethnicity, and homeland to this day, despite the universality of digital communications, is the strongest evidence that there are still cultures which remain solid, even if their peoples appear, in daily practices, to be dissolving into a unified cosmopolitan identity. A Muslim remains a Muslim, a Jew remains a Jew, a Christian remains a Christian, and likewise for the Eastern religions. Even nation-states, in the Westphalian sense established by classical modernity, still endure to this day, with loyalty to them remaining strong: the French are French, the Belgians Belgian, the Italians Italian, and so forth.

Despite the solidity of these major institutions that distinguish nations from one another, and despite the strength of the cultural wall safeguarding each identity, they remain vulnerable to ongoing attempts of penetration. Digital commerce constitutes an economic project aiming to undermine the sovereignty of the classical nation-state. The digital citizen represents an ideological project working to transcend local identities. The so-called Abrahamic religion constitutes a doctrinal project seeking to dissolve the three revealed religions (Islam, Christianity, and Judaism) and fuse their laws into a single liquid global faith.

Nevertheless, these major cultural institutions are not equally solid. Some continue to maintain their historical identity, while others have endured severe shocks that disrupted their long-standing stability. Cultural particularity also varies from one society to another. Some cultures remain solid, such as "primitive" cultures living in the jungles of Africa and the Amazon forests. Others continue to experience infiltration of their institutions and structures, as is the case with most of the world's cultures. Still others have surrendered entirely to processes of dissolution and fusion, as is evident among many populations in Western Europe, Australia, Canada, and the United States.

Figure (02): Types of World Cultures



Source: by the researcher

The overlap between the concepts of cosmopolitan culture and liquid culture appears more clearly with Zygmunt Bauman, when he addresses culture by saying: *"The purpose of culture, according to its original meaning, was to be a factor of change, not a factor of maintaining the status quo. Its role was to serve as a means of leading social development toward a universal human condition"* (Bauman, 2018, p. 15). Bauman's proposition fully aligns with the cosmopolitan vision of culture, a vision that transcends cultural particularities and goes beyond local standards and values. If there is any difference between the two concepts, it lies only in the approach. While the advocates of cosmopolitanism presented this concept within the framework of providing a universal ethical vision in which the

world is governed by global human values and standards, the concept of liquidity proposed by Bauman came within the framework of providing an anatomical reading of contemporary societies governed by the standards and values of the market and excessive consumption.

On this basis, we can say that there is no cosmopolitanism except for those who benefit from it (Woolton, 2005, p. 46). It is a neoliberal cosmopolitanism governed by powerful economic forces that drive contemporary globalization and seek to establish a universal system deeply embedded in the social and political life of cultures opposed to it, while protecting the flows of global money and trade. If those who produce and control information and its means of dissemination in societies during the age of television and mass communication are the ones who rule, dominate, and impose their vision on others (Bourdieu, 2004, p. 26), then the culture of the Internet and the digital world is ruled by business entrepreneurs responsible for spreading Internet culture throughout society. According to Manuel Castells, they are those elites of businessmen operating on the Internet, who are at the same time artists, prophets, and greedy men, as they hide their social unification behind their technical ingenuity (Castells, 2001, p. 6). Thus, those who control the tools and technologies of the digital world are the most capable of shaping culture and imposing values within digital societies.

7- Culture between Liquidity and Solidity in Digital Societies

Digital technology plays a decisive role in differentiating the cultures of peoples between liquidity and solidity. The relationship between liquid culture and technology is directly proportional; the more societies transform into digital societies, the more their cultures become liquid and submissive to the cultural standards imposed by the digital world. As for societies distant from the digital world, their cultures remain solid and their particularities intact, while the cultures of most peoples remain oscillating between solidity and liquidity due to the ongoing penetrations they are still exposed to.

The civilizational leap experienced by Western societies would not have occurred without the technological development they achieved in the later ages. For the rest of the world's peoples, if they wish to keep pace with this development, there is no path except through adopting digital technology, which created the glory of those societies. Yet, they must pay a price if they wish to achieve this desired catching-up, and this price is none other than willingly surrendering their cultural particularities to the authority of digital technology, which almost singlehandedly dominates the making of today's civilization. Thus, cultural identities are reshaped according to a universal vision dictated by the conditionality of the contemporary digital civilization. In this sense, Michel Foucault states: *"He who is subjected to a field of visibility, and who knows it, is the bearer of the constraints of power; he makes them play spontaneously upon himself"* (Foucault, 1977, p. 202). This is precisely what happens with different peoples of the world: peoples engaged in the digital sphere see their cultural particularities completely violated, while peoples where digital technology is still weakly spread continue to preserve the vitality of their cultural particularities.

If we look at the rate of Internet penetration among peoples, we find that 94% of the peoples of the European Union have Internet access, according to a survey conducted in 2024 (Digital_economy_and_society_statistics, 2024); 97.1% in the United States of America (Statista, 2024); and 94.9% in Australia (Digital 2024: Australia, 2024) in the same year. These peoples are in fact the very Western societies from which Zygmunt Bauman derived his conceptualization of culture as liquid culture.

In contrast, these percentages decline among the rest of the world's peoples: 73.9% in West Asian societies, and 72.4% in North Africa, for instance societies that may be considered to have a relatively cohesive cultural background, yet are subject to continuous and significant penetrations. This description applies to most peoples and societies around the world. As for the peoples who still enjoy relatively authentic and solid cultures, Internet penetration there is low compared to others: in Central African societies it does not exceed 31.8%, and 26.8% in West African societies in the same period (Internet penetration rate worldwide, 2025).

The observation is that there is an inverse relationship between the openness of cultural particularities and the rate of Internet penetration and digital technologies within them. The more prepared societies are to transition into the digital world, the more their culture is vulnerable to dissolution and transformation into a liquid culture.

Conclusion

Throughout their long history, societies have accumulated their cultural particularities that make them differ from one another, in order to distinguish themselves from each other. Alongside inventions and experimental sciences,

they have been preoccupied with discovering existence, either to harness it for managing the affairs of life, or to adapt it for use as a weapon in their conflicts with other nations. From this, we can say that every technology created by humankind contains within it two things: its use for managing life affairs in ways that reflect its culture, and its employment as a weapon against enemies to preserve its cultural identity. In this sense, culture is the condition for the realization of the existence of human societies, and thus it precedes technology in time.

On this basis, digital technology is nothing but a contemporary form of managing increasingly complex human life, and one of the most advanced weapons through which those who dominate it seek to extend their influence over all peoples and impose their culture on all cultures.

According to Darin Barney, social researchers have differed in their outlook on what societies will become in the post-industrial stage. While Bell sees in this transformation the possibility of overcoming the most humiliating and unjust aspects of the industrial era, an opportunity to make society more prosperous and participatory, to bring about better education, a flourishing global economy, and scientific progress free of ideology, another group of theorists and researchers sees in this transformation a forewarning of societies turning into programmed, one-dimensional societies. Such a transformation would deepen capitalist alienation, exposing human life to domination and irrational exploitation under the guise of rational, objective technology (Barney, 2015, p. 17).

We can extend this divergence to the transformation that cultural life is witnessing among peoples at the present moment. While some see that the transition of societies to the digital form will provide greater opportunities for protecting cultural particularities through the possibilities of digital presence of different cultures, it can also be said that these digital transformations enhance the penetrations cultures are subjected to, represent an opportunity for the assassination of cultural particularity, and a broader extension of digital dominance and a new universal culture.

At the same time, despite the major fissures that have affected the structure of cultural particularities of different peoples due to the penetrations practiced upon them, and despite the digital tools and technologies employed for this task, we can say that many of the world's cultures are still resisting the assassinations they are subjected to. Social and cultural institutions and the mechanisms for repelling these penetrations continue to perform their functions properly. Every external authority that tries to dominate them is confronted by an internal force that works to resist it. Resistance, in the Foucauldian sense, is concomitant with power. Wherever there is power, there is resistance. If digital societies are a form of power, then many human cultures possess the capacities that make them able to generate tools to resist penetration and methods to avoid dissolution and melting away.

Acknowledgment and Conflict of Interest

Acknowledgment

The author would like to express his gratitude to the Laboratory of Sociology of Cultural Communication: Values-Practices-Representations, Amar Telidji University, for providing academic support and intellectual guidance throughout the development of this study. Special appreciation is extended to colleagues and peers whose constructive comments contributed to enriching the quality of this research.

Conflict of Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References in Arabic

1. Engelke, M. (2020). *How to Think Like an Anthropologist* (Trans. Umriya Sultani). Arab Network for Research and Publishing.
2. Barney, D. (2015). *The Network Society* (Trans. Anwar al-Jamawi). Arab Center for Research and Policy Studies.
3. Bauman, Z. (2018). *Liquid Culture* (Trans. Hajjaj Abu Jabr). Arab Network for Research and Publishing.
4. Bauman, Z. (2017). *Liquid Surveillance* (Trans. Hajjaj Abu Jabr). Arab Network for Research and Publishing.
5. Bourdieu, P. (2004). *Television and the Mechanisms of Mind Manipulation* (Trans. Darwish al-Halouji). Kanaan Studies and Publishing.

6. Mattelart, A. (2008). *Cultural Diversity and Globalization* (Trans. Khalil Ahmad Khalil). Dar Al-Farabi.
7. Messadi, H., & Belalia, Z. (2024). Conversion to Islam in Contemporary Western Societies – Attempts to Understand the Phenomenon in Times of Hypermodernity. *Journal of Islamic Sciences and Civilization, 2*, 303–324.
8. Sale, B. B. (2017). *The Digital Universe: The Global Communication Revolution* (Trans. Diyaa Warad). Hindawi CIC Publishing House.
9. Wolton, D. (2005). *Globalization: The Other Dimension* (Trans. George Sharaf). Lebanese Publishing House.

Transliterated References

1. Engelke, M. (2020). *Kayfa tufakkir ka-anthrwbwljy* (tarjamat Umriya Sultani). al-Shabakah al-Arabiya lil-Abhath wa-al-Nashr.
2. Barney, D. (2015). *al-Mujtama al-shabki* (tarjamat Anwar al-Jamawi). al-Markaz al-Arabi lil-Abhath wa-Dirasat al-Siyasat.
3. Bauman, Z. (2018). *al-Thaqafah al-sailah* (tarjamat Hajjaj Abu Jabr). al-Shabakah al-Arabiya lil-Abhath wa-al-Nashr.
4. Bauman, Z. (2017). *al-Muraqabah al-sailah* (tarjamat Hajjaj Abu Jabr). al-Shabakah al-Arabiya lil-Abhath wa-al-Nashr.
5. Bourdieu, P. (2004). *al-Tilifizyun wa-aliyyat al-talaub bil-uqul* (tarjamat Darwish al-Halouji). Dar Kanaan lil-Dirasat wa-al-Nashr.
6. Mattelart, A. (2008). *al-Tanawwu al-thaqafi wa-al-awlamah* (tarjamat Khalil Ahmad Khalil). Dar al-Farabi.
7. Messadi, H., & Belalia, Z. (2024). *Iitinaq al-Islam fi al-mujtamaat al-gharbiyah al-muasirah: muhawalat li-fahm al-zahirah fi azminah al-hadathah al-faiqah. Majallat al-Ulum al-Islamiyah wa-al-Hadarah, 2*, 303–324.
8. Sayl, B. B. (2017). *al-Kawn al-raqmi: al-thawrah al-alamiyah fi al-ittisalat* (tarjamat Diyaa Warrad). Dar al-Nashr Hindawi CIC.
9. Wolton, D. (2005). *al-awlamah: al-bud al-akhar* (tarjamat Jurj Sharaf). al-Dar al-Lubnaniyah lil-Nashr.

Foreign References

1. Appadurai, A. (1996). *Modernity at Large: Cultural Dimensions of Globalization*. University of Minnesota Press.
2. Briggs, A., & Burke, P. (2009). *A Social History of the Media: From Gutenberg to the Internet*. Polity Press.
3. Bacon, F. (1900). *Advancement of Learning and Novum Organum*. Colonial Press.
4. Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241–258). Greenwood.
5. Castells, M. (2001). *The Internet Galaxy: Reflections on the Internet, Business and Society*. Oxford University Press.
6. Foucault, M. (1977). *Discipline and Punish: The Birth of the Prison*. Vintage.
7. Fuss, D. (1989). *Essentially Speaking: Feminism, Nature and Difference*. Routledge.
8. Hopper, P. (2007). *Understanding Cultural Globalization*. Polity Press.
9. Horkheimer, M., & Adorno, T. W. (2002). *Dialectic of Enlightenment: Philosophical Fragments*. Stanford University Press.
10. Nussbaum, M. C. (1996). *For Love of Country: Debating the Limits of Patriotism*. In J. Cohen (Ed.). Beacon Press.
11. Nussbaum, M. C. (1997). *Cultivating Humanity*. Harvard University Press.
12. Scheffler, S. (1999). Conceptions of cosmopolitanism. *Utilitas, 11*(3), 255–276.
13. Tylor, E. B. (1920). *Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Language, Art, and Custom*. John Murray.
14. Trend, D. (2001). *Reading Digital Culture*. Blackwell Publishers.
15. Yue Qian, Y. H. (2024, March). The digitalization of family life: A multilevel conceptual framework. (M. Stanfors, Ed.). *Journal of Marriage and Family, 86*(09). https://doi.org/10.1111/jomf.12983

Online Sources

1. Digital 2024: Australia. (2024). Retrieved January 16, 2025, from https://datareportal.com/reports/digital-2024-australia
2. Digital Economy and Society Statistics. (2024). Retrieved January 16, 2025, from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_economy_and_society_statistics_-_households_and_individuals
3. Statista. (2024). United States internet penetration 2000–2024. Retrieved January 16, 2025, from https://www.statista.com/statistics/209117/us-internet-penetration

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The reality of the Sino- Algerian partnership within the framework of the Belt and Road initiative: Gains and challenges.

Birem Fatima
University of Constantine -3- Salah Boubnider
Algeria
Email: Fatima.birem@univ-constantine3.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Algeria, China, partnership, The Belt and Road Initiative, gains and challenges.

Abstract

The article discusses the impact of Algeria's accession to the Belt and Road Initiative on the Sino-Algerian partnership, after learning about the nature and level of relations between the two countries, as well as of this Chinese initiative, which expresses China's future strategic vision to enhance its international standing.

We eventually learned through it that the Sino-Algerian partnership has entered a new stage of development since Algeria joined the Belt and Road Initiative in 2019, which will work to strengthen the bonds of partnership between them and open broad horizons for both parties China seeks through it to strengthen its influence in Algeria, and to benefit from its resources and all its geostrategic assets, while Algeria aims to achieve significant economic growth rates and breaks free from economic dependence on hydrocarbons and the West.

Citation. Biriem F. (2025). The reality of the Sino- Algerian partnership within the framework of the Belt and Road initiative: Gains and challenges.*Science, Education and Innovations in the Context of Modern Problems*, 8(11), 771–784. https://doi.org/10.56352/sei/8.11.60

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.01.2025 | Accepted: 02.06.2025 | Published: 10.09.2025 (available online)

1. Introduction

The field of international relations has witnessed a significant transformation since the post-Cold War era, both at the theoretical level and in the nature of international relations. This shift laid the foundation for intellectual approaches aligned with the new balance of power, marking a transition from a focus on hard power to a new concept emphasizing the importance of soft power in international relations, ultimately leading to the notion of smart power.

This theoretical development was accompanied with another development on the level of the international dynamics marked by the rise of new international powers influencing the international system among which China is the most significant and most important, because of what it possesses of tremendous potentials, civilizational, cultural, military, strategic, and especially being considered as a huge economic power, with its highest economic growth rates in the world These potentials have enabled China to actively open up to various regions of the world

through the implementation of large-scale projects aimed at achieving both economic and political gains. These efforts support its ambitions to secure its status as a major, globally responsible power, thereby protecting its interests and preserving its freedom of action in international affairs One of the most prominent and significant projects for China is "the Belt and Road" Initiative, through which it seeks to strengthen its influence and expand its global trade. This initiative is particularly important as it connects three continents—Asia, Europe, and Africa—inevitably leading to fundamental changes in the course of global trade.

Despite not being located on the historical Silk Road between China and Europe, Algeria represents a pivotal point in "the Belt and Road" Initiative due to its position as a connecting hub between Europe and Africa, as well as its possession of numerous elements and factors of strength. Additionally, there are strong historical ties between the two parties With Algeria officially joining the Belt and Road Initiative in 2019, its partnership with Beijing entered a new phase by agreeing on carrying out a significant number of projects and put into action many Chinese companies, the project of building the biggest port in Africa and in the Mediterranean basin is considered as one of those most prominent projects.

Herein lies the importance of the study which revolves around trying to understand the foundations and the objectives of the Chinese new strategy through "the Belt and Road" Initiative while highlighting the position of Algeria within it, and assessing the extent to which this initiative contributes to strengthening the Chinese-Algerian partnership.

Based on this we pose our research problem as follows:

To what extent does the Belt and Road Initiative contribute to supporting the Chinese-Algerian partnership?

To thoroughly address this central question, it is necessary to formulate the following sub-questions:

- What is the reality of Chinese-Algerian relations?
- What are the objectives of the Chinese Belt and Road Initiative?
- What is Algeria's position within the Chinese strategic perspective?
- What are the most significant gains of both parties from the Initiative? And what are the main challenges they face in achieving it?

To answer this research problem as well as the sub-questions we propose the following hypothesis:

The more the partnership between China and Algeria is built on mutual gains within the framework of the Belt and Road Initiative, and the more the various challenges they face are overcome, the more successful and strengthened their partnership becomes.

To address this topic, the descriptive-analytical approach has been employed in order to examine the current state of the Chinese-Algerian partnership under the Belt and Road Initiative and assess its contribution to achieving Algeria's strategic objectives. This has been done by exploring and de-constructing the various concepts and variables of the study, interpreting their significance, and establishing connections between them to arrive at answers to our research questions Our study is also based on the historical approach for a deeper and more accurate understanding of the subject, so we studied and analyzed the historical relationships between China and Algeria and its impact on the current state of bilateral relations.

The plan of the study has been divided into three main sections, the first section is about the nature and level of the Sino-Algerian relations, the second section discusses the contents of the Chinese Belt and Road Initiative of the twenty first century, then section three which is devoted to study the extent of the Belt and Road Initiative contribution to a new entry for strengthening the Sino-Algerian partnership.

First: The Nature and Level of the Sino-Algerian Relationship

Algeria is one of the most important countries within China's foreign strategy, given the significant growth in Sino-Algerian bilateral relations. These relations are part of the broader development of China's trade and economic ties with the African continent. This growth can be attributed, on one hand, to China's economic development, characterized by rising growth rates, an increased need for raw materials, and the demand for external markets and profitable investment regions. On the other hand, it is also a result of the opening up of Algeria's economy and the trade diversification strategy adopted by the Algerian government. All of this has led to the establishment of strong relations between the two countries.

The Sino-Algerian relations are considered as one of the strongest interactive relations in the international environment thanks to the common historical ties, among which is the mutual support of each other's causes, notably through their historical support for liberation movements, and their unconditional mutual alignment on various political and economic issues whether nationally or internationally.[1]

The relations between China and Algeria have passed through numerous main transformations over the past half century. These shifts have been shaped by factors related to China's strategic outlook, internal dynamics within Algeria, and broader changes in the international landscape. It can be said that this relationship has passed through three main phases, shifted between the intense mutual interest mainly on China's side during the 1960's and 1970's when Algeria was viewed as a region of strategic interest (the era of Maoist China), then the phase of Perceived neglect from the late 1970's until the early 1990s (China's reform period after 1978 under Deng Xiaoping's rule), finally China renewed interest to Africa in general and to Algeria in particular (China's growing role period in the world and Africa) beginning in the late 20th century till the present day.

The First Phase: The establishment of the People's Republic of China by Mao Zedong in October 1949 coincided with the launch of Algeria's liberation revolution against French colonialism. The historical support that China committed to the Algerian liberation movement is considered the foundational pillar that laid the groundwork for the current state of Sino-Algerian relations China was the first non-Arab country that admit "the Provisional Government of the Algerian Republic" early in December 1958, then established diplomatic relationships in the same month, in addition to China's full support for the independence of Algeria in 1962.[2]

Therefore, the nature of interest during this phase was primarily political ideological, since China was supporting the discourse that characterized the Third World "South- South" established over the past, by a call to collective struggle against all forms of imperialism, what led to a tremendous consensus on positions between China and Algeria regarding several issues most importantly "supporting liberation movements", in addition to the positive position of Algeria towards China regarding Taiwan's independence and China's restoration of its permanent seat at the United Nations Security Council in 1971.[3]

The Second Phase: Since the death of Mao Zedong in 1976 until the early 90's, China concentrated on implementing a broad internal reform process mainly in the economic field under the rule of "Deng Xiaoping" what affected its foreign policy, China distanced itself from its third world traditional allies, gradually reduced its foreign aid and adopting a more subdued stance in opposing the "irrational international system" dominated by the West, this position was reflected in China's relationship with African countries, including Algeria, where there was a significant decline in China's diplomatic, economic, and trade activities in the region.

The Third Phase: however, since the end of the Cold War, a new phase emerged, China renewed and intensified its interest in Algeria, this return was affected by the changes of the international environment on one hand, and by the pressing priorities of the Chinese strategy on the other hand, particularly after pursuing economic reforms and the tremendous growth after following a more liberalized economy governed by market logic, the Sino- Algerian relations transformed from being " ideological commitment" to be economic " pragmatic" relations built on mutual interest and independence,[4] This shift was further solidified with the launch of the Forum on Chinese–African Cooperation (FOCAC) in October 2000, which became an effective mechanism for dialogue and cooperation between the two sides,[5] as well as the establishment of the China–Arab States Cooperation Forum in September 2004 as an institutional framework for Sino-Arab relations. Additionally, China adopted a firm stance against internationalizing the crisis of deteriorating security conditions in Algeria during the "Black Decade" affirming its commitment to non-interference in Algeria's internal affairs and its full respect for Algerian absolute

[1] - Hanina Rajouh and Atiqa Kouachi, "The Sino- Algerian Partnership in Light of the Belt and Road Initiative: Gains and Risks," Journal of World Politics, Algeria: Political and International Studies Laboratory, Volume 06, Issue 01, 2022, p 215.
[2] - Khoueildat Saleh et al, "The Belt and Road Initiative: Sino-Algerian Strategic Relations in Times of Pandemics", **Al- Ijtihad Journal for Legal and Economic Studies,** Algeria: University Center of Tamanrasset, Volume 10, Issue 03, 2021, p 1056.
[3] - Ahmed Hadjadj, "International Competition over Africa: China Rediscovers Africa," International Politics, Cairo: Al-Ahram Center for Strategic Studies and Research, Volume 42, Issue 163, January 2006, p138.
[4] - George Tharwat Fahmy, "the Sino-African relations: an economic partnership without political conditionality", Political International, Cairo: Al-Ahram Center for Strategic Studies and Research, Volume 43, Number 167, January 2007, p 89.
[5] - L'hassan Al-Hasnawi, "International Competition in Africa: Goals and Means," Arab Journal of Political Sciences, Beirut: Center for Arab Unity Studies, Issue 29, Winter 2011, p 107.

sovereignty Besides, while Europeans hesitated to invest in Algeria during this decade because of the security situation, the Chinese inflows have reached its peak, with investments reaching around 800 million dollars.[1]

Accordingly, trade between the two countries have known a huge expansion within the beginning of the year 2000, mainly by granting the Chinese companies contracts to execute work projects of large- scale, and which witnessed a noticeable acceleration until the present time, as the bilateral trade relations growing steadily from 191 million dollars in 2000 to 1.75 billion dollars in 2005, reaching 2 billion dollars in 2006.

The 2014 was a watershed year, as the Sino-Algerian relations were elevated to the level of a strategic partnership in fields like economics, military, technology, politics, culture...etc, as both parties signed an agreement framing that on May 25th, 2014, as a consequence, the Chinese investors became the most active in Algeria, in many sectors like public works, construction, communication, industry, energy and mining,[2] among others The trade volume between the two countries has significantly increased to reach 9 billion dollars in 2018, and so to become at the top of Algeria's suppliers list, and displacing the dominance of the traditional Western partners particularly France,[3] as a result, China became Algeria's first trade partner.

In the Political sphere, the big consensus about the political issues and the clear harmony in the diplomatic positions always existed for both countries, besides the strategic relations were never limited to the political and economic levels, but expanded to other sectors including medical domain by sending Chinese medical missions and equipment to Algeria, in addition to tourism and cultural domains, as well as the military section by importing several weapons and military equipment, the partnership also included the space sector exemplified by the launch of Algeria's first communications satellite designed for telecommunications and internet services from a Chinese launch base.[4]

To underscore the depth of their rapprochement, Algeria and China signed a Memorandum of Understanding on September 4, 2018, concerning cooperation in the building and implementation of the Belt and Road Initiative, during the Forum on China-Africa Cooperation Summit held in Beijing. The memorandum was officially ratified on June 6, 2019, marking Algeria's formal accession to the Silk Road Economic Belt and the 21st Century Maritime Silk Road.[5] From that point on, Sino-Algerian relations took an upward trajectory, evolving into a strategic alliance within the framework of a vast global initiative. This development raises important questions regarding Algeria's position within the project, and whether it will indeed contribute to strengthening and deepening the Sino-Algerian partnership.

Second: Contents of the 21st Century Chinese Belt and Road Initiative:

This section contains a detailed overview of the Belt and Road Initiative proposed and implemented by China since 2013, by examining the background that led to the establishment of this Initiative in order to revive the ancient Silk Road but with new objectives.

2. 1. An Ancient Initiative with New Perspective: The Ancient Silk Road/ and The New One

The Belt and Road Initiative is considered the greatest project in the human history, as it is the primary driver of China's domestic policy and a cornerstone of its foreign diplomacy, it aims to rise high the banner of peaceful development on the basis of the ancient Silk Road history back to 2000 years ago,[6] which is a naming for a couple of land and maritime roads connected to each other as ships and caravans traversed linking China and Europe mainly for the Chinese silk but also perfumes, incense and spices trade It stretches over approximately 12,000 kilometers, extending from the commercial hubs in northern China then splits into two routes, the northern route which traverse Eastern Europe, the Black Sea, and the Crimean Peninsula all the way to Venice, then the Southern

[1] - Mohammad Hamshi and Samia Rabiei, "Sixty Years of Sino-Algerian Relations," Scientific Journal of Sino-Egyptian Research, Helwan University: Center for Chinese-Egyptian Research and Studies, Volume 02, Issue 01, January 2013, pp 71-72-87.
[2] - Ibid, p. 88.
[3] - The Algerian National Agency for the Development of Investment, "Foreign Trade Statistics in Algeria," on: http://www.andi.dz/index.php/ar/statistique/bilan-du-commerce-exterieur
[4] - Ben Djeddou Mohamed Al-Sharif, "The New Silk Road and Algeria's Accession to the Initiative," Al-Asala Journal for Studies and Research, Volume 01, Issue 02, 2019, p. 24.
[5] - Abdelrazak Benabdellah, "Algeria joins China's Silk Road Initiative", on: www.aa.com.tr
[6] - Lamia Makhloufi, "China's New Belt and Road Strategy and Africa," Madarat Siyassiya Magazine (Political Horizon Magazine), Algeria: Madar Knowledge Center for Research and Studies, Issue 03, December 2017, p174.

route that passes through Syria and end up into Egypt and north Africa, or through Iraq and Turkey all the way to the Mediterranean Sea.[1]

The Silk Road's origins are back to the reign of the Han Dynasty in China, around 200 BC. The term was given in 1877 by the German geologist Ferdinand Von Richthofen.

The ancient Silk Road founded many connections between East and West, enabling many civilizations to make profit from one another, it played a pivotal role in intellectual and cultural exchange, and so contributing in flourishing many civilizations such as the Chinese, Egyptian, Roman, Indian among others, as it contributed in the growth of many coastal cities located near ports and along the route, The Silk Road's function as a key trade corridor for silk came to an end with the rise of the Ottoman reign and the consolidation of its Empire.[2]

However coming back to the 21st century Belt and Road Initiative which was revived by the current president "Xi Jinping" just six months after being elected, he restructured China's domestic framework and adopted a bolder foreign policy than his predecessors, this Initiative's slogan is "pro-activeness" which is driven by a strong emphasis on achievement. This marked the end of Deng Xiaoping's[3] era of reactive foreign policy Xi Jinping introduced "the Silk Road Economic Belt" Initiative in his first official visit to Kazakhstan, during a lecture delivered at Nazarbayev University entitled "Promoting Friendship between Peoples for a Better Future".

In the following month during his visit to Indonesia, the Chinese president called for the establishment of the 21st Century "Maritime Silk Road" aimed at connecting China with ASEAN countries, as well as with South Asia, Africa, and Europe. As a result, the concept of "One Belt", "One Road" emerged as a result of the Chinese suggestion mentioned above.[4]

The initiative has undergone at least three name changes over the few last years: "Silk Road in 2013", "One Belt One Road in 2014" and finally "the Belt and Road Initiative" since 2015 This Initiative aims to connect China to the rest of the world through investing billions of dollars in infrastructure all along the Silk Road that connects China with Asia, Europe and Africa, to stand as the largest project in the human history for the construction of ports, roads, railways and industrial zones.[5]

2. 2. The Geographical Scope and Strategic Pillars of "The Belt and Road" Initiative:

The Chinese Silk and Road Initiative is a long term project, aiming to integrate Asia, Europe and Africa into a network of primarily economic relations by building the land-base and maritime infrastructure.

At the beginning it included 60 countries, then the number increased to become 140, what extend the Initiative's geographical scope from Eurasia to Africa, and Latin-America and the Caribbean, as well as the South Pacific region distributed as follows: 40 countries in Africa, in the south of the Sahara, 34 countries in Europe and central Asia, 24 countries in Eastern Asia and the Pacific, 17 countries in the middle East and North Africa, 19 countries in Latin America and the Caribbean, 6 countries in South East Asia, collectively, represent approximately 40 percent of global GDP.[6]

Therefore, the Initiative is founded on a philosophy that transcends the traditional narrow geographic conception of regional cooperation projects, Rather than being confined to a fixed geographic or geopolitical region, the Belt and Road Initiative has, from the outset, been based on an expansive and inclusive spatial scope that aims to encompass the largest possible number of countries and geographic regions.[7]

[1]- Zainab Abdullah, "The Theoretical and Conceptual Framework of the Chinese Belt and Road Initiative," in a collective book titled: *"The Chinese Belt and Road Initiative: The Economic Project of the Century in the World*, Berlin: The Arab Democratic Center for Strategic, Political, and Economic Studies, 2019, p. 05.

[2] - Hussein Qawadra, "The Significance of Straits and Sea Routes in the Chinese Belt and Road Initiative," in a collective volume titled: Global Competition for Straits and Sea Routes: Geopolitical and Geoeconomic Determinants, Batna: The Human Security Lab, Reality, Challenges, and Perspectives, 2020, pp. 151-154.

[3] - William A. Callahan, «china's belt and road initiative and the new Eurasian order », on: https://nupi.brage.unit.no

[4] - Nadia Kazem Al-Obaidi, "The Chinese Belt and Road Initiative: A Historical Study," in the collective volume titled The Chinese Belt and Road Initiative: The Economic Project of the Century in the World, op.cit., p. 25.

[5] -William A. Callahan, op.cit.

[6] - David Sacks, "Countries in China's Belt and Road Initiative: Who's in and Who's Out", on: https://www.cfr.org/blog

[7] - Lamia Makhloufi, op.cit. p 178.

Accordingly, China has established a group of multilateral banks namely: the Asian Infrastructure Investment Bank (AIIB), the New BRICS Development Bank (NDB), and the Silk Road Fund, to finance "the Belt and Road Initiative."

Regarding the scope of extension of the Initiative, it aims to connect China with the three mentioned continents through ports, highways, telecommunications networks and railways along two corridors:

- **The First Corridor: The Belt "The Overland Corridor":**

Which means the economical belt of the Silk Road, that runs from China then connects it with Middle Asia, Russia, Turkey, Europe and the Mediterranean Sea, it contains 6 connected corridors namely:[1]

1- The New Eurasian Land Bridge: It extends from the Chinese coastal cities of "Lianyungang" and "Rizhao" to "Rotterdam" in the Netherlands, via a railway line stretching 10800 kilometers from China through Kazakhstan, then on to Russia, Belarus, Poland, Germany, the Netherlands and Belgium"

2- The China, Mongolia and Russia Route: It extends from Northern China to Eastern Russia passing through Mongolia.

3-The China–Central Asia–West Asia Corridor: It extends from western China to Turkey, beginning in Xinjiang and passing through Central Asia to reach the Arabian Gulf, the Mediterranean Sea, the Arabian Peninsula, and 18 countries in West Asia (the Middle East).

4- The China–Indochina Peninsula Corridor: It extends from southern China to Singapore, serving as a land bridge connecting China with the Indochina Peninsula—and Vietnam, Laos, Cambodia, Thailand, Myanmar and Malaysia in Southeast Asia.

5- The China- Pakistan Corridor: It runs from Southwestern China to the Gwadar Port in Pakistan, it contains a trade network of highways, railways, pipes lines and fiber-optic cables.

6- The Bangladesh- China- India- Myanmar Corridor: it connects Southern China to India through a network of roads and railways and others.

The main corridors can be illustrated through the following map:

The Second Corridor: The Road Which Means "The Maritime Road Silk Of The Twenty-First Century":

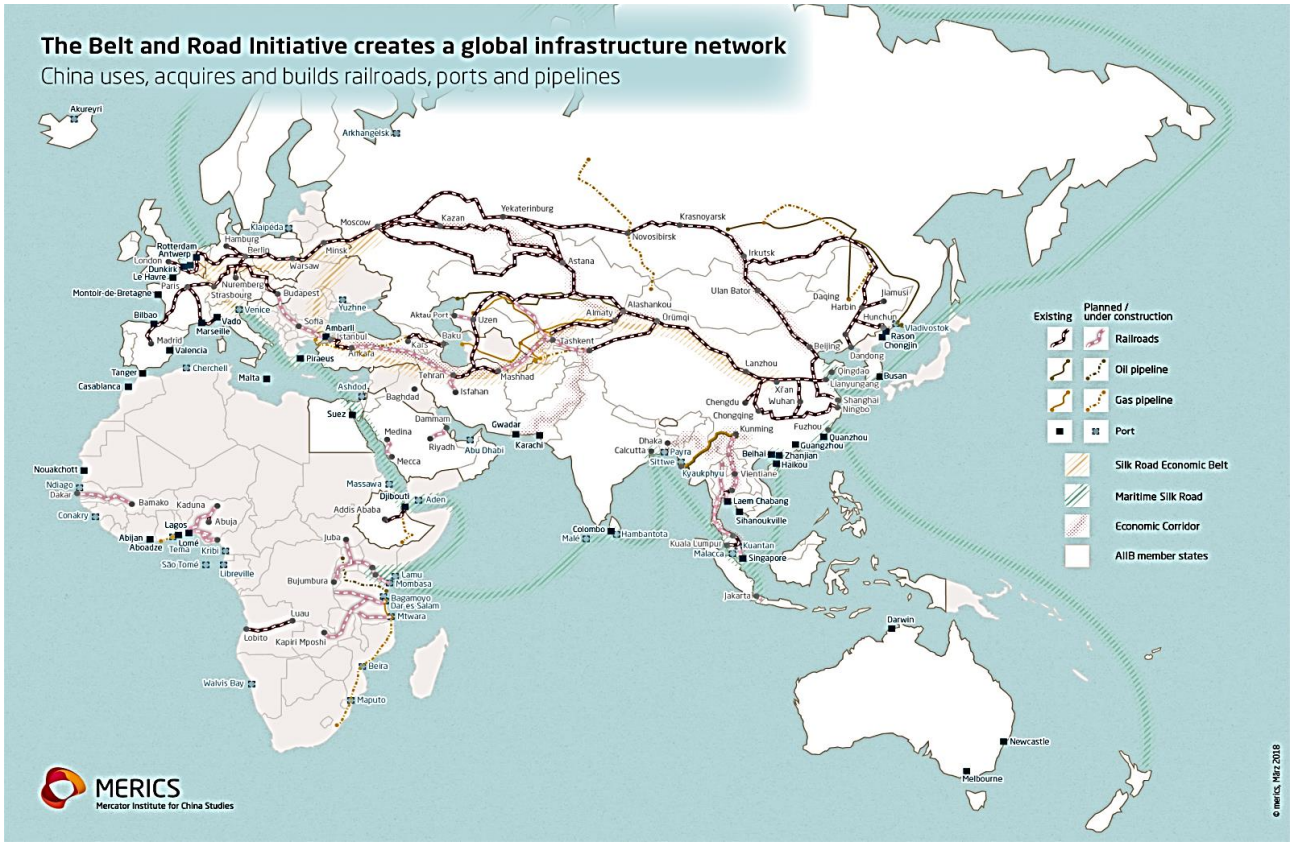
This road or corridor aims to develop the infrastructure of the partner countries and extends through 3 routes namely:

1- The Western Maritime Route: it extends from the China Sea to the Indian Ocean passing through the Arabian Sea and the Red Sea, then reaching the Mediterranean Sea.

2- The Southern Maritime Route: it extends from the southern China Sea to the Pacific Ocean.[2]

3- The Polar Silk Road: Announced in January 2018, this route reflects China's aim to establish maritime corridors through the Arctic; it is expected to shorten shipping times to Europe by up to 20 days compared to the traditional route through the Suez Canal, which takes approximately 48 days.[3]

[1] - Sharifa Kalaa, "China's Belt and Road Initiative: Motivations, scopes and Challenges", Research Journal, Algeria: Ziane Achour University Djelfa, Volume 06, Issue 02, 2021, p 159.
[2] - Amira Ahmed Harzali, "The Chinese Belt and Road Initiative: Background, Objectives, and Gains," in the collective book titled "The Chinese Belt and Road Initiative: The Economic Project of the Century in the World", op.cit., p. 74.
[3] - Sharifa Kalaa, op.cit., p 160.



Source: https://merics.org/sites/default/files/Silkroad-Projekt_EN_2020_150dpi.png

3. 3 The Initiative's Objectives and Ambitions:

The Chinese President Xi Jinping highlights the nature of China's "winner-winner" policy, emphasizes the benefits of cooperation with China in this huge project, and stresses that China ensures harmony and stability by employing soft power instead of the hard power[1] In a speech delivered at the opening ceremony of the first Belt and Road Forum in Beijing on May 14, 2017, President Xi Jinping stated that the initiative is inspired by the "spirit of the ancient Silk Road," which he described as "a great legacy of human civilization." He emphasized that it embodies the values of "peace, cooperation, openness, inclusiveness, mutual learning, and mutual benefit." According to him, the initiative represents a path of peace, prosperity, innovation, the linking of different civilizations, and the promotion of cultural and people-to-people exchanges through the establishment of economic corridors and cultural cooperation that yield mutually beneficial outcomes for all participating countries.[2]

Regarding the detailed expanded goals of the initiative, China intends to achieve the following objectives:

- Meeting the requirements of China's accelerated economic development, as a strategy to address the problem of the growing surplus in production in basic industries, by improving growth rates in Chinese exports, by finding new markets for Chinese enterprises.[3]

- Build and develop the infrastructure networks that connect the different regions which the road passes through such as routes and railways in order to guarantee the security of Land, sea and air shipping.

[1] - Gwendoléne Chambon, "The Relationship between the European Union and the People's Republic of China: China's Strategy in Europe as an Illustration of European Divisions," on: https://dumas.ccsd.cnrs.fr/dumas
[2] - Hussein Qawadra, op.cit., p 157-158.
[3] - Lamia Makhloufi, op.cit. p181.

- Straits and sea lanes hold significant importance in China's Belt and Road Initiative, as maritime trade is the main driver for sustaining the Chinese economy. Nearly 90 percent of China's total international trade; by both volume and value; takes place via the sea, particularly along the maritime route from the Indian Ocean through Southeast Asia, especially the Strait of Malacca, which remains under the protection and surveillance of the U.S. Navy.[1]

- Enhancing China's energy security is crucial, as the country heavily relies on oil imports from the Middle East and Africa, all of which pass through the Indian Ocean and the South China Sea. Around 80 percent of these imports are transported by sea via the Strait of Malacca. Consequently, the Chinese navy requires reliable logistical chains to resupply food, fuel, and weapons along its sea lines of communication. This necessitates the development of logistical infrastructure at strategic locations in key countries; a strategy known as the String of Pearls.

- Strengthening the global position of the Chinese currency "the Yuan", is another key objective. The use of the Yuan in settling trade transactions between China and the Belt and Road Initiative member countries represents a significant step toward promoting the international circulation of China's national currency.[2]

- Strengthening the position of Chinese technology and telecommunications companies: such as "ZTE" and "Huawei" as it is meant to play a vital role in developing the information and communications technology infrastructure across numerous Belt and Road Initiative countries. This contributes to expanding their operations and increasing their share in the international e-commerce market.[3]

- Preserving the regional sovereignty and enhance the neighborhood relations: China seeks to consolidate ties with its neighboring countries and promote regional stability, based on the perspective that shared economic interests can enhance political and security cooperation among nations.[4]

- Increasing Chinese influence regionally and internationally: Through these massive investments across various continents of the world, China seeks to expand its influence and provide an alternative development model to the Western model, whether in its immediate surroundings or in the Eurasia region, in addition to the African continent and other regions of the world. This has positioned the Belt and Road Initiative as a key instrument of China's soft power, which it seeks to leverage in asserting its peaceful rise as a global power.[5]

As a result, a significant body of literature; particularly from Western sources; expresses concern about China's geopolitical vision under the Belt and Road Initiative, arguing that China intends to establish a new form of economic and political dominance over participating countries They consider that the initiative is continuously evolving, presenting itself as a land and maritime project aimed at connecting continents. It is also viewed as a redefinition of the global map according to Chinese standards and as a projection of China's power in the medium term, especially since its projects are accompanied by the necessary Chinese financing and executed exclusively by Chinese companies.[6]

Therefore, the regional cooperation will extend to include the "shared beliefs and codes of conduct" of the Belt and Road Initiative countries. China seeks to employ soft power to reshape the world through its ideas, aspirations and standards Thus, the concept of a "community of shared destiny" offers an alternative moral framework for Asia; and ultimately for the world; rather than the West socializing China into liberal values, China may instead take the lead in integrating its region and the broader world through Chinese values. It is attempting to align its international development agenda with its security agenda: essentially seeking to purchase security through international development projects.[7]

Third: The "Belt and Road" Initiative A New Approach To Enhance The Sino- Algerian Partnership

3. 1. Algeria's Position and Significance Within the Belt and Road Initiative

[1] - Hussein Qawadra, op.cit., p 162.
[2] - Amira Ahmed Harzali, op.cit., p 80.
[3] - Sharifa Kalaa, op.cit., p 158.
[4] - Hussein Qawadra, op.cit., p 163.
[5] - Sharifa Kalaa, op.cit., p 158.
[6] - Gwendoléne Chambon, op.cit.
[7] - William A. Callahan, op.cit.

Algeria is the largest African country in terms of area "2.381.741 km2", and is considered the gateway to North Africa. It has a coastal strip of 1644 km, and shares 6343 kilometers of land borders with 7 neighboring countries Algeria also possesses substantial natural resources, including minerals and hydrocarbons, as well as large agricultural areas, particularly along the coastal region and the highlands. Additionally, there are land reclamation experiments underway in the vast Algerian desert as in "Oued Souf" Algeria also has a population exceeding 44 million people, making it a large market for Chinese products that are no longer dominated by France and Western countries. Furthermore, Algeria serves as a transit area to the African interior and acts as a connective zone within the geographic and cultural unity of the Maghreb, the Sahel region, and West Africa. It also has a coastline along the Mediterranean Sea, positioning it as a trusted partner in a significant geostrategic location near Europe. All of this has made Algeria a pivotal hub in the "Belt and Road" initiative due to its position as a linking area between Africa and Europe, coupled with its possession of various strengths and strategic assets.[1]

The concept of partnership, in its general sense, refers to the active connection between two or more parties based on specific criteria imposed by the particular interests of each party in order to achieve common goals. This definition applies to Algeria and China.

From China's perspective, there are three main driving forces or major motives underpinning its relationship with Algeria, as well as the necessity to include Algeria in the "Belt and Road" Initiative, which are:

1- Strategic motive: Algeria is considered a trusted partner in a significant geostrategic location close to Europe, as well as providing access to the coast and the Sub-Saharan region, particularly through the Trans-Saharan highway. This makes it an important hub for the Belt and Road Initiative, as China seeks to control vital territories to assert its international standing.[2]

2- Economic motives: Algeria offers numerous opportunities for China's ongoing pursuit of raw materials necessary to sustain the growth of its economy. China also aims to expand its control over the African market to promote its low-cost goods, as well as to broaden the presence of its investment bases and companies in Algeria across various sectors, especially infrastructure, hydrocarbons, and minerals. As a result, Algeria has become a key arena for government contracts and commercial opportunities for Chinese companies

3. Geopolitical Motive: China has benefited from Algeria's political influence in the Mediterranean region and within the African Union, as part of its efforts to secure African diplomatic support in the face of Western pressures on various issues such as human rights, Taiwan, and democracy. Moreover, China has relied on Algeria and other African countries to promote the Belt and Road Initiative, which continues to face criticism from Western powers.[3]

Regarding Algeria's partnership with China, it is relied on a set of key motives summarized as follows:

- The inevitability of economic emergence and diversification of the Algerian economy, which is heavily dependent on the hydrocarbons sector.

- The reliance on Chinese companies for the construction of infrastructure such as roads, ports, railways, airports, and more.

- Benefiting from incoming Chinese investments and transferred technology.[4]

- Diversifying its trade partners and reducing its dependency on Western powers; mainly France; known for its historical and colonial legacy in Algeria and Africa.

In this context, the Algerian Minister of Transport and Public Works stated in 2018: "We are pleased to join the initiative through which China will share its expertise and knowledge with the African continent, including Algeria, as part of a global development process".[1]

[1] - Ben Djeddou Mohamed Al-Sharif, op.cit., p 25.
[2] - Guendouz Aicha, "The Role of the New Silk Road in the Development of Algerian Foreign Trade: An Analytical Approach to Sino-Algerian Relations," Journal of the Economic Researcher, Algeria: Bordj Bou Arreridj University, Volume 08, Issue 02, 2020. p 128.
[3] - Khallaf Mohamed and Tawil Nassima, "Belt and Road Initiative in Africa: Challenges and Stakes", Al- Mofakkir Magazine, Algeria: University of Biskra, Volume 17, Issue 01, 2022. pp 118-119.
[4] - Hanina Rajouh and Atiqa Kouachi, op.cit., p 221.

So from an Algerian perspective, the country sought to join the initiative in order to take advantage of the opportunities it offers to protect its interests, achieve economic development and economic independence, and play a leading role in the region.

3. 2 Opportunities and Key Challenges of The Sino-Algerian Partnership Within The Framework of The "Belt And Road" Initiative:

Following the signing of the Comprehensive Strategic Partnership between China and Algeria in 2014 for a 5 year period; later renewed in 2019 alongside Algeria's official accession to the "Belt and Road" Initiative; both parties have demonstrated a clear commitment to expanding their areas of cooperation. As a result, China accelerated its efforts to develop the infrastructure necessary for the new Silk Road in Algeria through large-scale development projects. By 2021, the value of direct Chinese investment had reached $10 billion, while annual trade between the two countries amounted to $9 billion. According to official Algerian data, China remains the leading supplier of goods to Algeria.[2]

This highlights the significance of both countries in each other's economic calculations, as reflected in their mutual official statements. Algerian President Abdelmadjid Tebboune described China as a "strong partner and a diplomatic priority" during the visit of Chinese Foreign Minister Wang Yi in July 2021. President Tebboune called for enhanced cooperation with China, particularly in the areas of economy, trade, investment, energy, mining, and infrastructure construction.[3]

In return, Wang Yi stated: "China will continue to regard Algeria as an important partner in promoting unity and cooperation among developing countries under the new circumstances" He also pledged that China would work to translate the mutual political trust between the two countries into tangible outcomes through cooperation, and would support Algeria in accelerating its industrialization and enhancing its capacity for independent development".[4]

Accordingly, the two countries seek to jointly build the Belt and Road on the basis of mutual cooperation, shared benefits, and mutual trust. The two countries are also working "to strengthen cooperation with other participant states in the initiative and to support their advancing economic development. This includes promoting mutual exchange and support in line with the Initiative's principles of cooperation, development, and mutual benefit, by making full use of existing bilateral and multilateral cooperation mechanisms that bind the parties involved".[5]

In this context, China has secured numerous large-scale investments in Algeria, effectively "reshaping the balance of influence"; particularly that of France; Economic experts argue that Algeria has begun selecting its partners based on the principle of "those who offer the most reliable win-win principle".

The most significant projects are the following:

- One of the most significant projects is the large-scale iron ore exploration at the Gare Djebilet mine, located in the far southwest of Algeria, specifically in the Tindouf province. China secured the agreement for this project in April 2022. Described as the "project of the century", it is estimated to cost $2 billion and is expected to generate substantial revenues for Algeria ranging between $10 and $16 billion annually. This project holds the potential to help Algeria break free from its "dependence on oil." The project was carried out through a partnership between the Algerian Iron and Steel Company 'FERAL' and three major Chinese companies specializing in mining exploration and exploitation, in accordance with the 49/51 investment rule.[6] The mine's grey ore reserves are estimated at between 3 and 3.5 billion tons, spread across 3 exploitation zones: "Gare Djebilet West", "Central", and "East.".

[1] - Guendouz Aicha, op.cit., p 123.
[2] - Younes Burnane, "China's Silk Road Grants Algeria the largest port in Africa and the Mediterranean," on: https://al-ain.com/article/chinese-silk-road-algeria-largest-port-africa
[3] - Younes Bournane, "In numbers how the Chinese dragon ended the legend of France's backyard in Algeria," on: https://al-ain.com/article/chinese-investments-in-algeria-energy-metal
[4] - Ibid.
[5] - Ahmed Ezzi and Wafia Tidjani, "The Belt and Road as one of the alternatives for Algeria's integration into the global economy", Journal of Financial Economics, Banking and Business Administration, Algeria: University of Biskra, Volume 10, Issue 02, 2021. p 399.
[6] - "Gare Djbilet... A Chinese investment awakens the sleeping iron giant in Algeria," on: https://al-ain.com/article/algeria-china-gare-djebilet-mine-investment

- Construction of the Largest Port in Africa: El Hamdania Port As part of China's efforts to realize its ambitious Belt and Road Initiative, the Chinese government has prioritized the maritime corridors of the initiative, having proven to be the safest routes for global trade compared to land routes. In this context, China has focused on implementing one of its largest strategic projects near the city of Cherchell in Tipaza Province.[1] The project, which began in May 2021 as a joint Algerian–Chinese venture, aims to build the largest port in Africa and the Middle East within the framework of the Belt and Road Initiative. With an estimated cost of $6 billion and a projected completion timeline of 7 years, the port is designed to integrate Algeria into the global trade network. It will be connected to a network of railways and the Trans-Saharan Highway – Algeria/ Lagos– a China-led project that extends deep into the African continent.[2]

The Algerian authorities have described it as the "lifeline of local and African development", with a strategic objective that goes beyond Algeria's borders aiming to break the isolation of landlocked African countries and transform Algeria into a global industrial hub The port consists of 23 docks and is designed to handle 6.5 million containers, with a total capacity of 25.7 million tons annually. It will also be capable of accommodating the world's largest ships, with a capacity of up to 240 thousand tons.[3]

- A project to build the largest phosphate plant in Tebessa was signed in March 2022 between "ASMIDAL", a subsidiary of the Algerian oil group "SONATRACH", and the Chinese company "CITIC". The project has an estimated cost of $6 billion. The Algerian government expects the plant to generate annual revenues of up to $1.9 billion and reach a production capacity of 10 million tons per year. The project is also expected to contribute to strengthening the Algerian economy.[4]

- A project to activate investment in the production and marketing of trucks was launched in partnership with the National Company for Industrial Vehicles in Rouiba, with a commitment to ensuring gradual local integration into the product.

- A project for the production of electronic payment terminals has been launched as a joint venture between the National Company for Electronic Industries "ENIE" and the Chinese firm "ZTE"

- A project for the development and exploitation of marble and tile quarries is being carried out in partnership with the public industrial group Mines of Algeria.[5]

In May 2022, China inaugurated another project in Algeria's petrochemical sector, valued at approximately $500 million. Through this initiative, Algeria seeks to elevate its petrochemical export revenues to $5 billion. The agreement was concluded between SONATRACH and the Chinese consortium LPEC/CNTIC. The contract entails the establishment of a production facility for "Methyl Tertiary Butyl Ether MTBE", an additive utilized in the manufacture of unleaded gasoline; a fuel whose nationwide adoption was mandated in Algeria starting in 2020.[6]

These projects illustrate the strengthening of Algerian-Chinese partnership, which has been further reinforced by Algeria's accession to the Belt and Road Initiative. This development underscores the depth and continuity of the bilateral relationship, as well as the high levels of mutual trust in the implementation and execution of joint development projects. Within a rapidly evolving international environment, Algeria's accession to the Chinese initiative represents a strategic step aimed at aligning with the dynamics of this shifting global context.

However, despite the positive aspects offered by the initiative; such as the strengthening of their strategic relations and the economic benefits it brings; the Belt and Road Initiative and the Sino-Algerian partnership face a number of challenges that may impact their future. Among the most significant of these challenges are the following:

[1] - Ahmed Ezzi and Wafia Tidjani, op.cit. p 400.
[2] - Yahyaoui Abdelhafid et al, "Opportunities for Algeria to join the Belt and Road Initiative, the case of Al- Hamdania Port," **Al-Riyada Journal of Business Economics,** Algeria: University of Chlef, Volume 08, Issue 01, January 2022, p 215.

[3] - Younes Bournane, "In numbers how the Chinese dragon ended the legend of France's backyard in Algeria,"op.cit.
[4] -"Algeria signs a $6 billion agreement with China to build a phosphate plant.", on: https://al-ain.com/article/algeria-china-phosphate
[5] - Ahmed Ezzi and Wafia Tidjani, op.cit. p 398.
[6] - Younes Bournane, "In numbers how the Chinese dragon ended the legend of France's backyard in Algeria,"op.cit.

- International Competition: One of the primary challenges facing the Belt and Road Initiative and the Sino-Algerian partnership is the intensifying international competition over Africa in general and Algeria in particular. Notably, France continues to employ various means to preserve its influence in Algeria, this last remains one of the most strategically significant and sensitive regional frameworks from the French perspective. Historically, France's policy toward Algeria has served as an indicator of its international standing. Consequently, a French withdrawal from Algeria would signify a decline in the French economy, as it would lose access to vital natural resources and key markets for many of its products.

Moreover, French influence in Algeria is particularly evident through culturally and politically Francophile elite that seeks to shape public opinion and national policy in line with the orientations of the French administration. This influence is further entrenched through the widespread use of "the French language", which serves as a vehicle for cultural dominance and positions France as a soft power counterweight to Chinese expansion. In contrast, China lacks comparable instruments of influence, particularly in terms of effective cultural outreach and strategic communication.[1]

- The Rise of Sinophobia: The growing phenomenon of Sinophobia, fueled by direct and often tense interactions between the local Algerian population and Chinese laborers, poses another significant challenge. These frictions have at times escalated into physical violence against Chinese nationals, as exemplified by the incidents in Bab Ezzouar in August 2009.

- Concerns over the Practices and Performance of Chinese Companies Operating in Algeria; There are growing concerns regarding the conduct and business practices of Chinese firms active in the Algerian market.[2] China's model of state capitalism is, in some circles, perceived as a form of "neo-colonialism," particularly in light of Algeria's weak industrial base and the overwhelming presence of Chinese goods in its domestic markets. Additionally, Algeria's continued near-total dependence on the hydrocarbons sector for export revenues; particularly in its trade relations with China; the absence of sufficient productive diversification, essential for achieving self-sufficiency across various goods and services, remains a major obstacle to the emergence of a competitive and dynamic Algerian economic and commercial presence at both regional and international levels[3] Consequently, the partnership between Algeria and China risks becoming confined; much like Algeria's traditional partnerships with Western powers; to a pattern in which Algeria serves primarily as a market for Chinese goods and a key supplier of raw materials and hydrocarbons.

- Global Crises: Global crises; regardless of their nature; constitute a significant challenge to the Belt and Road Initiative. Such disruptions may impact Algeria's long-term ability to benefit from the initiative and cast doubt on the resilience and sustainability of the Sino-Algerian partnership.[4]

Conclusion

Based on what was stated in this study and after clarifying the nature and level of the relationship between China and Algeria, as well as an analysis of the 21st-century Belt and Road Initiative and Algeria's positioning within it, we reached the following results:

- There is a complementarity between the Algerian and Chinese perspective and strategic orientations, rooted in the historical depth of their bilateral relations; founded on cooperation, mutual respect for national sovereignty, and non-interference in internal affairs. Both nations share a legacy of having been subjected to colonialism and foreign domination, which has contributed to the evolution of their ties into a strategic partnership. This stands in stark contrast to the approach adopted by many Western countries, which continue to engage with developing nations through a strategy that reflects a "purely colonial" orientation.

- The Belt and Road Initiative represents a strategic milestone in the development and strengthening of the Sino-Algerian partnership, particularly if both parties remain committed to pursuing mutual benefit and fully leveraging the opportunities this cooperation presents, through the two parties' affirmation that their trade and economic relationship is based on the "win-win" principle.

[1]- Kadri Hussein and Birem Fatima, Africa's Position in French Foreign Policy, Algeria: Human Security Laboratory: Reality, Challenges and Prospects, 2019.
[2]- Hanina Rajouh and Atiqa Kouachi, op.cit., p 227.
[3]- Ibid, p 222.
[4]- Khallaf Mohamed and Tawil Nassima, p 128.

- Algeria's accession to the Belt and Road Initiative is expected to consolidate a comprehensive partnership between the two countries and significantly contribute to the realization of major investment projects; particularly in the energy and public works sectors. In the long term, these developments are likely to generate substantial benefits for both the Chinese and Algerian sides China is pursuing a set of objectives not only in economics and politics through this partnership, with particular emphasis on the economic dimension. This focus stems from its awareness of the critical importance of securing access to primary resources to sustain its resource-intensive economy. Moreover, economic engagement is viewed as essential to achieving its desired international standing, especially in light of the intensifying strategic rivalry with the United States Conversely, Algeria seeks to maximize the benefits it can derive from the initiative in order to strengthen its economy and enhance its regional and international competitiveness. The Belt and Road Initiative indeed presents a promising alternative for integrating the Algerian economy more effectively into the global economic system; especially in light of the shortcomings and failures of all previous regional partnership frameworks. Therefore, it is looking for an economic alternative aiming to achieve a real cooperation and partnership in several fields. However, Algeria must not content itself with merely serving as a transit corridor for international trade. Rather, it should prioritize its national interests by formulating strategic plans aimed at economic diversification, escaping the trap of hydrocarbon dependency, strengthening the national industrial base, as well as developing the other economic sectors.

Consequently, if both parties are to ensure the sustainability and further development of their strategic partnership in the future, it is essential that they intensify joint efforts to overcome the key challenges confronting this cooperation; particularly international competition. This can be achieved by focusing on vital and forward-looking sectors, most notably collaboration in the field of renewable energy and the enhancement of cultural and civilizational exchange; an area that continues to receive considerable emphasis from traditional Western powers active in the region.

Acknowledgment and Conflict of Interest

Acknowledgment

The authors would like to express their sincere gratitude to all institutions, colleagues, and experts who contributed to the completion of this research. Special thanks are extended to the editorial team of the journal *Science, Education and Innovations in the Context of Modern Problems* for their constructive feedback and guidance during the preparation of the manuscript. The support from research laboratories, universities, and academic networks has been invaluable in shaping the quality and depth of this work.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper. All authors confirm that they have no financial, personal, or professional relationships that could inappropriately influence or bias the content of this manuscript.

References

1. Ahmed, E., & Tidjani, W. (2021). The Belt and Road as one of the alternatives for Algeria's integration into the global economy. Journal of Financial Economics, Banking and Business Administration, 10(2), 387–406. University of Biskra.
2. Benabdellah, A. (n.d.). Algeria joins China's Silk Road Initiative. Anadolu Agency. Retrieved from https://www.aa.com.tr
3. Ben Djeddou, M. A.-S. (2019). The New Silk Road and Algeria's accession to the initiative. Al-Asala Journal for Studies and Research, 1(2), 15–44.
4. Bournane, Y. (n.d.). China's Silk Road grants Algeria the largest port in Africa and the Mediterranean. Al-Ain News. Retrieved from https://al-ain.com/article/chinese-silk-road-algeria-largest-port-africa
5. Bournane, Y. (n.d.). In numbers: How the Chinese dragon ended the legend of France's backyard in Algeria. Al-Ain News. Retrieved from https://al-ain.com/article/chinese-investments-in-algeria-energy-metal

6. Chambon, G. (n.d.). The relationship between the European Union and the People's Republic of China: China's strategy in Europe as an illustration of European divisions. HAL-DUMAS. Retrieved from https://dumas.ccsd.cnrs.fr/dumas
7. Collective authors. (2019). China's Belt and Road Initiative: The world's economic project of the century. Berlin: Arab Democratic Center for Strategic, Political and Economic Studies.
8. Collective authors. (2020). Global competition over straits and sea lanes: Geopolitical and geo-economic determinants. Batna: Human Security Laboratory.
9. Fahmy, G. T. (2007). The Sino-African relations: An economic partnership without political conditionality. International Politics, 43(167), 88–92. Al-Ahram Center for Strategic Studies and Research.
10. Guendouz, A. (2020). The role of the New Silk Road in the development of Algerian foreign trade: An analytical approach to Sino-Algerian relations. Journal of the Economic Researcher, 8(2), 113–132. Bordj Bou Arreridj University.
11. Hadjadj, A. (2006). International competition over Africa: China rediscovers Africa. International Politics, 42(163), 138–141. Al-Ahram Center for Strategic Studies and Research.
12. Hamshi, M., & Rabiei, S. (2013). Sixty years of Sino-Algerian relations. Scientific Journal of Sino-Egyptian Research, 2(1), 69–98. Helwan University.
13. Hanina, R., & Kouachi, A. (2022). The Sino-Algerian partnership in light of the Belt and Road Initiative: Gains and risks. Journal of World Politics, 6(1), 213–230. Political and International Studies Laboratory.
14. Hussein, K., & Fatima, B. (2019). Africa's position in French foreign policy. Algeria: Human Security Laboratory.
15. Kalaa, S. (2021). China's Belt and Road Initiative: Motivations, scopes, and challenges. Research Journal, 6(2), 154–167. Ziane Achour University Djelfa.
16. Khallaf, M., & Nassima, T. (2022). Belt and Road Initiative in Africa: Challenges and stakes. Al-Mofakkir Magazine, 17(1), 116–133. University of Biskra.
17. Khoueildat, S., et al. (2021). The Belt and Road Initiative: Sino-Algerian strategic relations in times of pandemics. Al-Ijtihad Journal for Legal and Economic Studies, 10(3), 1047–1067. University Center of Tamanrasset.
18. Makhloufi, L. (2017). China's new Belt and Road strategy and Africa. Madarat Siyassiya Magazine, 3, 106–125. Madar Knowledge Center for Research and Studies.
19. National Agency for the Development of Investment. (n.d.). Foreign trade statistics in Algeria. Retrieved from http://www.andi.dz/index.php/ar/statistique/bilan-du-commerce-exterieur
20. Sacks, D. (n.d.). Countries in China's Belt and Road Initiative: Who's in and who's out. Council on Foreign Relations Blog. Retrieved from https://www.cfr.org/blog
21. Al-Hasnawi, L. (2011). International competition in Africa: Goals and means. Arab Journal of Political Sciences, 29. Beirut: Center for Arab Unity Studies.
22. William, C. A. (n.d.). China's Belt and Road Initiative and the new Eurasian order. NUPI. Retrieved from https://nupi.brage.unit.no
23. Yahyaoui, A., et al. (2022). Opportunities for Algeria to join the Belt and Road Initiative: The case of Al-Hamdania Port. Al-Riyada Journal of Business Economics, 8(1), 198–220. University of Chlef.
24. Gare Djbilet... A Chinese investment awakens the sleeping iron giant in Algeria. (n.d.). Al-Ain News. Retrieved from https://al-ain.com/article/algeria-china-gare-djebilet-mine-investment

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Orientalism: Classification and characteristics

Zoulikha Mansri

Dr.
Faculty of Islamic Sciences, University of Algiers 1
Algeria
Email: zoulikhamansri@gmail.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Orientalism, Orientalist Schools, Classification, Characteristics.

Abstract

Orientalism is a term that denotes an inclination towards the East. Representing an intellectual school characterised by diverse features and motivations, it is challenging for researchers to grasp its complexities. This school has given rise to various sub-schools resulting from the long-standing conflict between two distinct civilisations: Islamic civilisation and Western civilisation. Against this backdrop, this research paper aims to present models of opinion on the classification of Orientalist schools and outline their characteristics using a descriptive methodology. Furthermore, it seeks to identify the classifications proposed by researchers for these various Orientalist schools, as well as their distinguishing features. The main findings reveal that, despite their differing orientations and characteristics, all these Orientalist schools address the issue of the Islamic East.

Citation. Zoulikha M. (2025). Orientalism: Classification and characteristics. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 785–795. https://doi.org/10.56352/sei/8.11.61

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.01.2025 | Accepted: 19.06.2025 | Published: 10.09.2025 (available online)

Introduction:

All praise is due to Allah, Lord of the Worlds. Peace and blessings be upon the noblest of Messengers, his family, companions and all who follow them with righteousness until the Day of Judgement.

Orientalism is a movement that emerged from the conflict between the East and the West, driven by the desire for one side to dominate the other militarily, economically, culturally and ideologically from ancient times to the modern era. Orientalism has played a significant role in the life of the Islamic nation for centuries, with Orientalist schools acting as a bridge between East and West. They have engaged in Orientalist research across various aspects of Islamic civilisation, including cultural and civilisational studies. Consequently, Orientalist schools have emerged, particularly in Europe and more broadly in the Western world, focusing on the study of the East and its civilisation and culture. Each school has concentrated on specific aspects of Islamic thought and heritage, including scientific, philosophical, linguistic and religious dimensions.

However, the existence of these Orientalist schools does not negate differences among researchers and thinkers in their classification and categorisation. Each group has its own classification and perspective, differing from others based on their epistemological foundations and subjective and objective inclinations. This article aims to introduce these classifications, emphasising the most well-known and commonly discussed one among researchers, while also highlighting the key characteristics that define each Orientalist school.

Thus, the research problem can be formulated as follows: To what extent do researchers differ in their classification of Orientalist schools? What characteristics distinguish each Orientalist school from the others?

Conceptual foundation:

Before delving into the formulation of the research, we will establish it conceptually by defining Orientalism both linguistically and terminologically. This will be followed by an examination of how researchers have classified these Orientalist schools.

First: The concept of Orientalism

1. Orientalism linguistically:

It is said that 'the East' refers to the light that enters through a crack in the door. The phrase 'the sun rose' means that it has risen and spread its light upon the earth[1]. Some modern linguistic sources state that 'to orient' means to seek knowledge of the East and its languages[2]. According to the Al-Mawrid dictionary, 'the sun rose' means it has come up[3].

2. Orientalism Terminologically:

Orientalism is a general concept typically applied to an intellectual trend concerned with the study of the cultural life of Eastern nations, particularly Islam and Arab civilisation[4]. According to Edward Said, orientalism is a branch of knowledge that systematically explores the East, considering it a subject for learning, discovery and application[5].

Classification of Orientalist Schools:

Researchers have differing opinions on how Orientalist schools should be classified. Some have considered a thematic classification, listing Orientalists according to their academic specialisms. Others have focused on Qur'anic studies, studies of the Sunnah, and the biography of the Prophet Muhammad (peace be upon him), or the history of the Arabs and Islam[6]. Classifications based on ideological schools and religious trends have also been proposed. However, most researchers have classified these schools according to geographic affiliation.

First: Classification of Orientalist Schools Based on Specialisations

1. Dr Hussein Al-Harawi classified Orientalists based on their specialisms into the following three schools:

- The school specialising in Quranic studies.

- The school specialising in the life and biography of the Prophet Muhammad (peace be upon him).

- The school specialising in Arab history[7].

[1]- Muhammad Murtada al-Zubaidi (d. 1205 AH/1790 CE), The Bride's Crown from the Jewels of the Dictionary, Study and Verification by Ali Bushri, Dar al-Fikr, 1994, Vol. 13, p. 237.
[2]- Ahmed Reda, Dictionary of the Body of the Language, Maktabat al-Hayat, Beirut, 4th ed., 2005, Vol. 8, p. 64.
[3]- Ibrahim Mustafa et al., The Concise Dictionary, Dictionary of the Arabic Language, Cairo, n.d., Vol. 1, p. 482.
[4]- Adnan Wazzan, Orientalism and Orientalists: A Point of View, n.p., p. 15.
[5]- Aqila Hussein, The Muslim Woman and Orientalist Thought, Dar Ibn Hazm, Beirut, Lebanon, 1st ed., 2004, p. 35.
[6]- Muhammad Farouk al-Nabhan, Orientalism: Its Definition, Schools, and Effects, Publications of the Islamic Organization for Education, Science and Culture - ISESCO, Rabat, Morocco, n.d., 1433 AH/2012 CE, p. 21.
[7]- Al-Ziyadi Muhammad Fathallah, Orientalism: Its Goals and Methods – An Applied Study on the Approach of Westerners in Studying Ibn Khaldun, n.p., n.d., p. 69.

However, this classification lacks clarity as it confines Orientalism to the Islamic aspect. It is impossible to find an Orientalist school that focuses solely on the life of the Prophet without also addressing the Qur'an, and it is impossible to separate Arab history from its Islamic context. Consequently, some Orientalists may belong to all three of the schools proposed by Al-Harawi, and many have also shown an interest in Arabic literature and language.

2. Dr. Najib Al-Aqqiqi divided Orientalism into two schools:

- The political school examines literature in its broadest sense.

- The archaeological school focuses on artefacts[1].

However, this classification is inadequate as Orientalist schools engage with various fields and cannot be limited to the political and archaeological realms. In his book The Orientalists, Al-Aqqiqi dedicates a significant portion to studying Orientalists based on geographic schools, indicating his belief in the geographic distribution of Orientalists. He later favoured this classification over others.

Furthermore, the classification based on specialisations proposed by some researchers is not without its challenges. This classification is difficult to implement precisely for two reasons:

- Most Orientalists have written on overlapping topics, making it challenging for researchers to categorise them accurately due to the interconnectedness of Islamic sciences.

- According to this thematic classification, it is difficult to assign specific characteristics to each Orientalist school because each school includes a large number of Orientalists whose methodologies, orientations and inclinations differ significantly due to the diverse nature of the peoples they study. This complexity has led some researchers to classify Orientalist schools based on the affiliations of their members[2].

Secondly, Orientalist schools can be classified based on the religious inclination or ideological school of the Orientalist.

Some researchers have proposed this classification, dividing Orientalist schools into four categories:

1. The Christian School: This school has two branches:

- Catholicism;

- Protestantism.

Although they differ in some doctrinal opinions, these two branches converge in their works and objectives.

2. The Jewish School: This school has specific goals that serve global Jewish agendas[3]. One of the most prominent Jewish Orientalists is the British scholar David Samuel Margoliouth, who initially studied Greek and Latin before turning his attention to Semitic languages. His writings are characterised by bias and a significant lack of objectivity. Another notable Jewish Orientalist is Louis Bernard, who specialised in Islamic history and served as director of Jewish and Middle Eastern Studies in Philadelphia, Pennsylvania. He also offered advice to the US Congress on multiple occasions.

The openness of Orientalist schools paved the way for Jews, both from the diaspora and from Israel, to establish their own Orientalist school. This is known as Jewish Orientalism and later became the foundation for Israeli Orientalism[4].

3. The General Atheistic School:

[1]- Same reference, pp. 69-70.
[2]- Mohammad Farouk al-Nabhan, Orientalism: Its Definition, Schools, and Effects, p. 21, previous reference.
[3]- Abdul Rahman Habannaka al-Maidani, The Three Wings of Deceit and Their Hidden Aspects: Evangelism, Orientalism, Colonialism, Dar al-Qalam, Damascus, 8th ed., 1420 AH - 2000 CE, pp. 126-127.
[4]- See: Wasit University, Roots of Jewish Orientalism, website: https://lark.vowasit.edu.iq >view, date retrieved: 04-08-2025, time: 21:00.

Members of this school are Western Orientalists who are atheists. They aim to promote atheistic thought and establish materialistic concepts of life that deny the existence of God. These individuals hold various social, political and economic views[1].

Notable characteristics of the atheist Orientalist school include:

- Materialism

- Denial of the unseen

- Interpreting religion as a social phenomenon

- Critique of Islam

- Support for secular and atheist movements.

4. The Communist Atheistic School:

This school consists of communist Orientalists who aim to promote atheism and communism, and encourage Islamic peoples to adopt these ideologies[2].

This classification appears to be more precise and widely accepted than the previous one. However, classification based on geographic affiliation remains the most prevalent.

Third: Classification of Orientalist Schools Based on Geography:

This classification has been adopted by most researchers, as the geographic classification approach is easier for categorization. It helps in extracting the characteristics, orientations, positions[3], and areas of interest of each school. Below is a reference to some European schools, considering them the oldest in the field of Oriental studies.

1. The French Orientalist School:

The beginnings of French Orientalism may closely resemble individual attempts and works that blend science with superstition and myths, along with a vague image of the Eastern world. French connections to the East began when the Muslim Arabs opened some of its provinces[4]. Specifically, the Arab-Islamic interaction with France started in the second century Hijri (the first half of the eighth century CE), when Arab military activity began penetrating Europe from Andalusia. One notable manifestation of this interaction was the Battle of Tours in 732 CE[5].

Historians agree that the true phenomenon of Orientalism began with French monks who learned Arabic in Andalusia. In the name of religion, Western politicians united with the Church and spoke with one voice against Islam. Therefore, French Orientalism inherently carries the nature of religious conflict, and most French Orientalists express an ancient root of deep-seated animosity. It has been noted by one scholar that he has not encountered a Protestant Orientalist who dealt with Islamic heritage in a hateful Catholic manner. Thus, most researchers concur that the first Orientalist who cared about Islam and Muslim issues was French[6].

According to Orientalist Johan Foucault, the origins of French Orientalism can be traced back to the Congress of Vienna in 1311 CE. In the twilight of his life, Pope Louis enacted a law affecting five European universities: Paris,

[1]- Abdul Rahman Habannaka al-Maidani, The Three Wings of Deceit and Their Hidden Aspects: Evangelism, Orientalism, Colonialism, pp. 126-127.
[2]- Hassan Dhiya al-Din 'Itr, Allah's Revelation, Its Truths and Characteristics in the Book and the Sunnah, A Refutation of the Claims of Orientalists, Dar al-Maktabi, Damascus, Syria, 1st ed., 1419 AH-1999 CE, p. 25; Abdul Rahman Habannaka al-Maidani, The Three Wings of Deceit and Their Hidden Aspects, p. 127, previous reference.
[3]- Mohammad Farouk al-Nabhan, Orientalism: Its Definition, Schools, and Effects, p. 22, previous reference.
[4]- Walid Kadhim al-Khashan, The French Orientalist School: A Study of Its Style and Methodology, n.p., n.d., p. 34.
[5]- Salma Hussein Alwan al-Mousawi, The Historical Development of French Orientalism Until the Twentieth Century, Majallat Kulliyat al-Jami'a al-Islamiyya, Kulliyat al-Adab, Iraq, n.d., p. 92.
[6]- Shayeb al-Door Muhammad, French Orientalism and Popular Heritage in Algeria, a thesis for a Master's degree, Department of Arabic Language and Literature, Faculty of Arts, Languages and Arts, University of Oran, 2010, pp. 34-35.

Oxford, Bologna, Salamanca and the papal central administration. This law mandated that professors teach students Eastern languages, including Arabic, Hebrew, Greek and Chaldean[1].

Historically, French Orientalism is considered one of the oldest and most significant Orientalist schools. Chairs in Eastern languages were established in Paris and at the Collège de France in 1539[2]. Some scholars argue that French Orientalism began with the Church's decision at the Vienna Council in 724 AH (1312 CE), which included establishing chairs for Eastern languages (Arabic, Greek, Hebrew and Syriac) at the University of Paris and other European universities[3].

The French continued to seek the intellectual enlightenment of the East through missions, including one led by Princess Elisabeth, cousin to King Louis of France. This mission aimed to learn about Eastern culture and disseminate its sciences[4].

2. The Italian Orientalist School:

Some researchers trace Italy's connection to Orientalism back to before the birth of Christ due to its geographical proximity to Arab and African countries[5]. The connection between Italy and the Islamic world was particularly strengthened during the reigns of King Roger I and his grandson, Frederick II. However, others argue that Italy's official interest in Eastern studies began in the eleventh century, with the first such studies commencing at the University of Naples in 1076 CE, followed by other universities[6].

Nevertheless, these studies did not develop significantly until the nineteenth century, when the Italian Society for Oriental Studies was founded in 1871. From that point on, Orientalism took on political, economic and cultural characteristics, paving the way for the invasion of Libyan territories in 1912[7].

3. The Spanish Orientalist School:

Spain has close historical ties with the Islamic and Arab worlds, as Arab and Islamic civilisation spread throughout Andalusia and remained there for over five centuries. This historical context enabled Spanish orientalists to study the history of Arabs and Muslims, as well as their influences[8].

Therefore, Spanish interest in the East is a natural consequence of Spain's historical experience, which resulted in a substantial body of scientific material, providing the primary motivation for Spaniards to engage with and specialise in Eastern sciences[9].

The establishment of Arabic schools in Spain dates back to the mid-thirteenth century CE. However, the Orientalist movement in Spain reached its peak in the nineteenth century, spearheaded by Michael Asín Palacios[10], the founder of the renowned 'Andalusian' Orientalist journal. Notable libraries housing valuable collections of Arabic and Islamic manuscripts include the Escorial Library and the National Library in Madrid.

4. The British Orientalist School:

[1]- Johann Fück, A History of the Orientalist Movement and Arabic and Islamic Studies in Europe until the Beginning of the 20th Century, translated to Arabic by Omar Lufti al-'Alem, Dar al-Manar al-Islami, Beirut, Lebanon, 2nd ed., 2001, p. 32.
[2]- Salma Hussein Alwan, The Historical Development of French Orientalism, Faculty of Arts, p. 2, previous reference.
[3]- Farouk Omar Fawzi, Orientalism and Islamic History (The First Islamic Centuries): A Comparative Study Between the Islamic and European Perspectives, al-Ahliyya lil-Nashr wa al-Tawzi', Amman, Jordan, 1st ed., n.d., p. 33.
[4]- Ali Husni al-Kharboutli, The Orientalists and Islamic History, al-Hay'a al-Misriyya lil-Kitab, Egypt, n.d., 1988 CE, p. 29.
[5]- Al-Ziyadi Mohammad Fathallah, Orientalism: Its Goals and Methods, p. 69, previous reference.
[6]- Same reference, p. 81.
[7]- Hassan Ali al-Hashemi, A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, Dar al-Kafeel for Printing and Publishing, 1st ed., 1435 AH/2014 CE, p. 42.
[8]- Same reference, p. 56.
[9]- Al-Ziyadi Mohammad Fathallah, Orientalism: Its Goals and Methods, p. 91.
[10]- Spanish Orientalist, born in Zaragoza in 1871, completed his secondary education at a Jesuit school, then joined the seminary. He continued his studies there until he graduated as a priest and began his priestly work in 1895 at the Church of San Catano, passing away in 1944. See: Abdul Rahman Badawi, Encyclopedia of Orientalists, Dar al-'Ilm lil-Malayeen, Beirut, Lebanon, 3rd ed., 1993, pp. 121-126.

The study of Arabic language and literature by British scholars dates back to the Middle Ages. Notable figures include Edward Pococke[1], who translated the works of Greek philosophers. The first chair in Arabic studies was established at the University of Cambridge in 1623, followed by the first such chair at the University of Oxford in 1626[2].

These developments demonstrate the ancient nature of English connections to the East, which can be traced back to the years before Islam. Some sources state that relations were established between Ireland and the East as early as the mid-third century CE, when some monastic travellers went to Egypt, Syria and Palestine en route to the Holy Land. Nevertheless, English writings about the East did not emerge until the first century Hijri, when Willibald wrote about his travels to Arab lands, followed by other pilgrims and traders[3].

The Church played a significant role in encouraging Oriental studies during the tenth, eleventh and twelfth centuries, with the Pope advocating the study of Eastern sciences and civilisations. Napoleon's campaign was perhaps one of the most direct and influential factors in promoting Oriental studies. The University of Oxford is considered to be one of the first English universities to establish a department for Oriental studies, followed by a department for Arabic and Islamic studies in 1636 CE[4].

The British Museum Library in London developed an interest in Eastern heritage, incorporating the libraries of various consuls who had worked in Cairo, Baghdad, Muscat and Damascus. The library amassed a vast collection of Eastern artefacts, including manuscripts, documents, Qur'ans and dictionaries[5]. Other English universities also began establishing departments for Oriental studies, subsequently creating affiliated schools and colleges in Africa, Arab countries and other Islamic regions, including India and Pakistan[6].

Initially, British Orientalism had a religious character, but in later periods it took on a pronounced colonial political direction, aiding the spread of sectarian studies. British Orientalists worked in all fields that served British colonial interests, including for the British East India Company[7].

5. The Dutch Orientalist School:

The connection between the Netherlands and Orientalism dates back many centuries, with Leiden University being one of the most renowned institutions to contribute to Orientalist thought in Europe. The university's famous printing press was established by the Orientalist Thomas Erpenius[8], to whom Oriental studies owe a significant debt. The press published the Islamic Encyclopedia in both its old and modern editions[9], as well as an indexed dictionary of hadith terms[10].

The Oriental Society was founded in Leiden in 1920 and collaborated with Danish and Norwegian Orientalists to publish a scientific journal called Eastern Works. Leiden University's library contains precious manuscripts that Dutch Orientalists spent centuries collecting[11]. Many Orientalists, including Hamaker, Dozy, de Jong and Keenan, catalogued these manuscripts.

[1]- Edwards A. Bath: A British Orientalist, among his works are The Nile and Political and Economic Statistics about the Middle East, London, 1950. See: The Orientalists Najib al-'Aqiqi, Dar al-Ma'arif, Cairo, 4th ed., Vol. 2, p. 490.
[2]- Hassan Ali al-Hashemi, A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, previous reference, p. 55.
[3]- Orientalism: Its Goals and Methods, Fathallah al-Ziyadi, previous reference, p. 72.
[4]- Mohammad Farouk al-Nabhan, Orientalism: Its Definition, Schools, and Effects, previous reference, p. 27.
[5]- Najib al-'Aqiqi, The Orientalists, Vol. 2, p. 23.
[6]- Mohammad Farouk al-Nabhan, Orientalism: Its Definition, Schools, and Effects, p. 28.
[7]- Hassan Ali al-Hashemi, A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, previous reference, p. 55.
[8]- Born in Gorcom in 1548, graduated in theology from Leiden University, traveled to England, France, Germany, and Italy in search of books and manuscripts. When he returned to Leiden, he was appointed the first professor of Arabic there in 1613, passing away in 1624. See: Najib al-'Aqiqi, The Orientalists, previous reference, Vol. 2, pp. 653-654.
[9]- Saadoun al-Samouk, Orientalism and its Methodologies in Islamic Studies, Dar al-Manahij for Publishing and Distribution, Amman, Jordan, 1st ed., 1431 AH/2010 CE, p. 104.
[10]- Najib al-'Aqiqi, The Orientalists, Vol. 2, p. 650.
[11]- Same reference, Vol. 2, p. 646.

Although Dutch Oriental studies may not match their earlier prominence, they remain in good condition, with current interests focusing on heritage and philosophy[1].

6. The German Orientalist School:

German connections to the East date back to the tenth century CE, when the German emperor Otto sent the priest John as an ambassador to the caliph Al-Nasir in 956 CE. In turn, Caliph Al-Nasir sent one of his own priests as an ambassador to the German emperor[2]. Following the Second Crusade in 1147 CE, German Orientalists began began to pay attention to Islamic civilisation, especially after clergymen started translating Arabic books. Hermann of Dalmatia, a German[3], contributed to the first translation of the Qur'an between 1141 and 1143 CE, although this this translation was not published until four centuries later[4].

Jacob Kremer (1554–1613) was the first German Orientalist to focus on teaching Arabic. He wrote a book on the Arabic alphabet and how to write it[5]. He also compiled a catalogue of Arabic manuscripts and translated parts of the Gospel into Arabic. He prepared Arabic letters in wooden types for the printing press. He proposed establishing a chair in Arabic studies to translate philosophy and medicine from their Arabic sources[6].

Another noteworthy figure is Reiske, who is considered one of the first German Orientalists. A scholar of Greek literature, he dedicated his life to studying Arabic and Islamic civilisation. He translated the introduction to The Calendar of Histories by Hajji Khalifa in 1847 CE and published samples of Arabic poetry[7]. The Orientalist Theodor Nöldeke[8] was a leading figure in Eastern studies in the mid-nineteenth century, while Hartmann founded the German Oriental Society for Islamic Studies, which published the journal The World of Islam. Additionally, Orientalists published several journals on the East and its heritage. The most notable of these is the "Islam Journal", founded by Orientalist Karl Becker[9] and focusing on Arab and Islamic heritage[10].

There are many other schools that cannot be covered here, such as the Russian and American Orientalist schools. The emphasis on European schools is due to their pioneering role in Oriental studies and their comprehensive approach to various intellectual, cultural and religious topics.

Fourth: Characteristics of Orientalist Schools

The French Orientalist School:

The French Orientalist School has distinct characteristics, including:

1. Its studies focus on three main areas:

A. The religious axis

B. The political axis

[1]- Saadoun al-Samouk, Orientalism and its Methodologies in Islamic Studies, p. 105.
[2]- Hassan Ali al-Hashemi, A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, p. 69.
[3]- A German Orientalist, a colleague of Robert in his studies and translations, appointed as a pastor at the Church of Sheny, then a bishop in Storja. He classified a book on rhetoric and poetry by Aristotle, aided by Al-Farabi's explanation on rhetoric, influenced by the Arabs. See: Najib al-'Aqiqi, The Orientalists, Vol. 1, p. 124.
[4]- Hassan Ali al-Hashemi, A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, previous reference, pp. 68-69.
[5]- Al-Ziyadi Mohammad Fathallah, Orientalism: Its Goals and Methods, previous reference, p. 75.
[6]- Hassan Ali al-Hashemi, A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, pp. 69-70.
[7]- Abdul Rahman Badawi, Encyclopedia of Orientalists. previous reference, pp. 298-303.
[8]- Nöldeke is considered the father of German Orientalists, born in Harburg in 1836, studied Arabic and Hebrew and their literatures, as well as as Sanskrit, Persian, and Turkish. He obtained his first doctorate in 1856 with a thesis on the history of the Quran, moved to Vienna and then to Leiden, where he found abundant Arabic manuscripts. His works include History of the Quran and studies on Arabic grammar. See: Abdul Rahman Badawi, Encyclopedia of Orientalists, pp. 595-598.
[9]- He is among the prominent German Orientalists interested in German politics, appointed president of the Institute for Colonial Affairs, held a ministerial position, and was an expert on religious, political, and economic conditions in the Islamic world. See: Abdul Rahman Badawi, Encyclopedia of Orientalists, p. 74.
[10]- Mohammad Farouk al-Nabhan, Orientalism: Its Definition, Schools, and Effects, p. 30.

C. The colonial axis[1].

2. It has had a significant impact on the development of German Orientalism, diverting it towards religious and political themes. This is evident from the fact that many German Orientalists studied under their French counterparts, including figures such as Freitag[2], Flügel[3] and Fleischer[4].

3. Sorbonne University's global reputation clearly had an effect on invigorating Eastern studies in France[5].

4. The Institute of Oriental Languages, founded in 1195 CE, is widely regarded as the most important centre for French Orientalism.

5. Many institutes, schools and cultural centres were established in Eastern countries, significantly influencing the Frenchification of many of these countries, particularly those colonised by France.

6. Orientalism is characterised by specialisation, meaning that most of its members focused on specific aspects of research and study.

7. Most French universities and institutes dedicated to Eastern studies were founded by monks and clergy, who managed these institutions[6].

8. French Orientalism is regarded as the primary European reference point for research and studies related to the Tuareg and Berber peoples. This focus was aided by the concentration of French colonies in Africa, and such studies were not without insidious colonial intentions[7].

9. Many officers from the French armed forces were involved, and their work in French colonies enabled them to excel in various aspects of Eastern studies. Notable figures among them include Jacot[8], Montan[9] and Bershée[10], among others.

The Italian Orientalist School:

The early phase of Italian Orientalism was characterised by a religious focus, which later evolved into colonial objectives. This is particularly evident during the Italian occupations of Libya, Ethiopia and Somalia.

Italian Orientalists established themselves in the East and Arab countries, teaching at scientific institutions and universities, particularly in Egypt. Notable Arab intellectual leaders[11] such as Taha Hussein studied under these Orientalists, including Carlo Nallino[12].

---

[1]- Orientalism: Its Goals and Methods, Mohammad Fathallah al-Ziyadi, previous reference, p. 85.
[2]- George William Freitag (1788-1861), a renowned German Orientalist, born in Luneburg, learned Arabic in Germany, traveled to Paris for further studies under (De Sacy), appointed as a professor of Arabic at Bonn University in 1819, where he passed away. He focused on ancient Arabic literature and published many poems. See: The Orientalists, Najib al-'Aqiqi, previous reference, Vol. 2, pp. 697-698.
[3]- Flugel, one of the highly regarded German Orientalists, born in Saxony in 1802 and died in 1870, worked extensively with Islamic heritage, leaving behind significant works including the publication of Kashf al-Dhunoon by Haji Khalifa, Nojoom al-Furqan fi Atraf al-Quran, a famous dictionary, and cataloging Arabic, Persian, and Turkish manuscripts in the Imperial Library of Vienna. See: The Orientalists, Najib al-'Aqiqi, Vol. 2, p. 701.
[4]- Fleischer (1801-1888), a prominent German Orientalist, known as the founder of organized Arabic studies in Germany, held a chair in Arabic Arabic at Leipzig University for fifty years until his death, leaving many works including The History of the Arabs Before Islam and Catalog of Eastern Manuscripts in the Dresden National Library. See: The Orientalists, Najib al-'Aqiqi, Vol. 2, pp. 706-707.
[5]- A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, Hassan Ali al-Hashemi, previous reference, p. 50.
[6]- Orientalism: Its Goals and Methods, Mohammad Fathallah al-Ziyadi, previous reference, p. 86.
[7]- A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, Hassan Ali al-Hashemi, p. 51.
[8]- Jacques: one of the French army officers who engaged in Oriental studies, known for two studies: The State of the Alawites and Antioch as a Tourist Center. See: The Orientalists, Najib al-'Aqiqi, Vol. 1, p. 242.
[9]- Robert Montan: one of the French Orientalists who served in the French army, born in 1893 and died in 1954, held several academic positions including director of the French Institute in Damascus, and left many works including The East and the West and Political Life of the Berbers in Morocco. See: the Orientalists, Najib al-'Aqiqi, Vol. 1, p. 272.
[10]- Léon Berché (1889-1955), a French Orientalist who started as a translator officer, later held several administrative positions in Tunisia, translated The Ring of the Dove by Ibn Hazm. See: Encyclopedia of Orientalists, Abdul Rahman Badawi, p. 91.
[11]- Hassan Ali al-Hashemi, A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, pp. 42-43.
[12]- One of the prominent Arabists in Italy, born in Turin in 1872, learned Arabic at his university, specializing in the Arabic language and Islamic civilization, appointed as a professor in Naples, then at the University of Palermo, and later at the University of Rome, where a chair for

- Many female Orientalists were present, including Maria Nallino, Olga Pinto, Angela Codazzi and Esther Panetta. Additionally, Italian Orientalism is characterised by the phenomenon of inheritance, whereby children follow in their parents' footsteps.

There is, however, a noticeable lack of interest in other parts of the East, particularly the Far East[1].

The Spanish Orientalist School:

The Spanish Orientalist School has made significant contributions to the translation and publication of Arabic books, thereby benefiting European scholarship. One of the most renowned translators was Emilio García Gómez.

Spanish Orientalists focused on philosophy, mysticism, history and literature. Prominent figures in this field include Plathius, Raimundo[2] Martini and Father Dario, who produced numerous works[3].

Spanish Orientalism shares many similarities with German Orientalism, particularly in terms of preserving, cataloguing, editing and publishing Arab heritage. However, Spanish Orientalism has the advantage of possessing a significant portion of Arab and Islamic heritage in libraries left by Muslims in Spain.

Although the 20th century saw a clear decline in Orientalist activities, Spanish Orientalism saw some exceptions. Notable scholars such as Asín Palacios wrote around 250 books and papers, some of which are multi-volume works, alongside Juan Talía Blanques[4].

Cataloguing Arabic manuscripts was a major area of interest for Spanish orientalists, with key figures including Pascual Gayangos[5], Salvador Gómez and Alarcón.

- Priests and monks played a significant role in revitalising Spanish Orientalism[6].

The British Orientalist School:

- British Orientalism originated from personal motivations, which later evolved into religious motives aimed at invigorating missionary activities, followed by colonial motives as the English engaged with the East as occupiers.

- The University of Cambridge and Oxford are considered the two most significant places where British Orientalism emerged and flourished.

- Some Orientalists participated in military and diplomatic roles or served as advisors in the British Foreign Office and the Colonial Office[7], including figures like Richard Burton and Watson.

The Dutch Orientalist School:

- The beginnings of Dutch Orientalism were driven by missionary zeal.

- Dutch Orientalism operated within a Catholic papal framework.

- It is characterised by comprehensiveness, depth, novelty and objectivity[8].

---

history and Islamic studies was established for him in 1915, passed away in 1938. His works include A Scene from Egyptian Life and The Formation of Arab Tribes Before Islam. See: Najib al-'Aqiqi, The Orientalists, Vol. 1, pp. 377-380.

[1]- Al-Ziyadi Muhammad Fathallah, Orientalism: Its Goals and Methods, pp. 83-84.

[2]- Among the early monks who engaged in Oriental studies, born in 1230 AH and died in 1284 AH, learned Arabic in Tunisia and mastered other Eastern languages, acquired knowledge of Islamic sciences, and it is said that he memorized Sahih Muslim and Sahih al-Bukhari. He left some works, including The Dagger of Faith. See: Najib al-'Aqiqi, The Orientalists, Vol. 2, p. 31.

[3]- Al-Ziyadi Muhammad Fathallah, Orientalism: Its Goals and Methods, pp. 92-93.

[4]- Ángel Gontalet Plantia (1889-1949), one of the most famous Spanish Orientalists, focused on philosophy and Arabic literature in Andalusia, learned Latin, studied philosophy and theology, obtained his baccalaureate in 1908, then his license in 1910, and published a book titled The Arabists in Toledo during the Twelfth and Thirteenth Centuries. See: Abdul Rahman Badawi, Encyclopedia of Orientalists, p. 72.

[5]- Pascual Gayangos (1809-1879), born in Seville and died in London, studied under the famous French Orientalist Silvestre de Sacy, traveled to North Africa to master Arabic, in 1831. See: Abdul Rahman Badawi, Encyclopedia of Orientalists, p. 170.

[6]- Hassan Ali al-Hashemi, A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, pp. 58-60.

[7]- Al-Ziyadi Muhammad Fathallah, Orientalism: Its Goals and Methods, p. 73.

[8]- Al-Samarrai, Orientalism Between Objectivity and Fabrication, p. 103-104, previous reference.

Leiden University played a significant role in the inception and development of Dutch Orientalism[1].

The German Orientalist School:

German Orientalism is generally considered to be relatively neutral and distant from political, colonial or religious aims, and does not usually stem from colonial backgrounds. However, this does not imply that German efforts are completely devoid of bias or objectivity.

It focuses on ancient studies, emphasising the study of Islamic Arab heritage and the history of Islamic civilisation.

- German Orientalism has become a reliable source for Qur'anic studies among European Orientalists[2].

Conclusion:

Through exploring various Orientalist schools and their classifications, we can conclude that Orientalism is an attempt to understand the East through a Western lens influenced by religious, cultural and political backgrounds.

Orientalist schools generally address all aspects of Eastern civilisation — political, cultural, social and religious — with a particular focus on Arab and Islamic civilisation. Each school has unique characteristics and orientations that distinguish it from the others. For instance, the French school is noted for its clarity, precision, and comprehensiveness.

Differences among researchers in classifying Orientalist schools stem from their cognitive frameworks, cultural inclinations and convictions. Most researchers prefer geographic classification because it is a practical method that makes it easier to identify the characteristics of each school.

Each school specialises in certain subjects and fields. For example, the French Orientalist school focused on the Arabic language, whereas the British school was more concerned with doctrine and the biography of the Prophet.

Acknowledgment and Conflict of Interest

Acknowledgment

The author wishes to extend sincere gratitude to the Faculty of Islamic Sciences at the University of Algiers 1 for providing the academic environment and support necessary for the completion of this study. Special appreciation is expressed to colleagues and peers who provided insightful feedback during the preparation of the manuscript. The author is also thankful to the reviewers and editorial board of the journal for their valuable comments and constructive suggestions that helped improve the quality of this paper.

Conflict of Interest

The author declares that there is no conflict of interest related to the publication of this article. The research was conducted independently, and no financial, personal, or professional relationships have influenced the results or interpretations presented in this study.

References

1. Ibrahim, M., et al. (n.d.). The concise dictionary: Dictionary of the Arabic language. Cairo.
2. Reda, A. (2005). Dictionary of the body of the language (4th ed.). Beirut: Maktabat al-Hayat.
3. ʿItr, H. D. (1999). Allah's revelation, its truths and characteristics in the Book and the Sunnah: A refutation of the claims of Orientalists (1st ed.). Damascus, Syria: Dar al-Maktabi.
4. Al-Hashemi, H. A. (2014). A critical reading of the history of the Qur'an by the Orientalist Theodor Nöldeke (1st ed.). Dar al-Kafeel for Printing and Publishing.
5. Al-Ziyadi, M. F. (n.d.). Orientalism: Its goals and methods – An applied study on the approach of Westerners in studying Ibn Khaldun. [Publisher not identified].

[1]- Najib al-'Aqiqi, The Orientalists Vol. 2, p. 646.
[2]- Hassan Ali al-Hashemi, A Critical Reading of the History of the Qur'an by the Orientalist Theodor Nöldeke, pp. 77-78.

6. Al-Samouk, S. (2010). Orientalism and its methodologies in Islamic studies (1st ed.). Amman, Jordan: Dar al-Manahij for Publishing and Distribution.
7. Al-Mousawi, S. H. A. (n.d.). The historical development of French Orientalism until the twentieth century. Majallat Kulliyat al-Jami'a al-Islamiyya, Kulliyat al-Adab, Iraq.
8. Al-Door, S. M. (2010). French Orientalism and popular heritage in Algeria (Master's thesis). University of Oran, Faculty of Arts, Department of Arabic Language and Literature.
9. Badawi, A. R. (1993). Encyclopedia of Orientalists (3rd ed.). Beirut, Lebanon: Dar al-ʿIlm lil-Malayeen.
10. Habannaka al-Maidani, A. R. (2000). The three wings of deceit and their hidden aspects: Evangelism, Orientalism, Colonialism (8th ed.). Damascus, Syria: Dar al-Qalam.
11. Wazzan, A. (n.d.). Orientalism and Orientalists: A point of view. [Publisher not identified].
12. Hussein, A. (2004). The Muslim woman and Orientalist thought (1st ed.). Beirut, Lebanon: Dar Ibn Hazm.
13. Al-Kharboutli, A. H. (1988). The Orientalists and Islamic history. Egypt: al-Hay'a al-Misriyya lil-Kitab.
14. Fawzi, F. O. (n.d.). Orientalism and Islamic history (The first Islamic centuries): A comparative study between the Islamic and European perspectives. Amman, Jordan: al-Ahliyya lil-Nashr wa al-Tawziʿ.
15. Al-Nabhan, M. F. (2012). Orientalism: Its definition, schools, and effects. Rabat, Morocco: Islamic Organization for Education, Science and Culture (ISESCO).
16. Al-Zubaidi, M. M. (1994). The bride's crown from the jewels of the dictionary (A. Bushri, Ed.). Beirut: Dar al-Fikr. (Original work published 1790).
17. Al-ʿAqiqi, N. (n.d.). The Orientalists (4th ed.). Cairo: Dar al-Maʿarif.
18. Al-Khashan, W. K. (n.d.). The French Orientalist school: A study of its style and methodology. [Publisher not identified].
19. Fück, J. (2001). A history of the Orientalist movement and Arabic and Islamic studies in Europe until the beginning of the 20th century (O. L. al-ʿAlem, Trans.) (2nd ed.). Beirut, Lebanon: Dar al-Manar al-Islami.

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Educational Leadership Styles and Their Influence on the Psychological and Social Climate of the Classroom Group: Revisiting the Lippitt and White Experiment as a Foundational Model in Pedagogical Practice

Makhloufi Ali
Dr.
Lecturer, Section (A)
University of Oran 2 – Mohamed Ben Ahmed
Algeria

Issue web link	https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html
Keywords	Educational leadership styles; classroom climate; social psychology; Lippitt and White experiment; pedagogical facilitation

Abstract

The study investigates the profound impact of educational leadership styles on the psychological and social climate of classroom groups, with particular emphasis on the seminal experiment conducted by Lippitt and White under the supervision of Kurt Lewin. Leadership within the classroom is not merely an organizational function but a determinant of the learners' emotional security, motivation, and cooperative behavior. Drawing on social psychology and pedagogical theory, this paper critically examines how different facilitation styles—authoritarian, democratic, and laissez-faire—shape group interaction, cohesion, and the quality of the learning environment.

Findings from Lippitt and White's experiment provide a valuable empirical framework for understanding how leadership behaviors influence both individual student adjustment and collective classroom dynamics. The democratic style, characterized by participatory decision-making, fosters a supportive psychosocial climate, enhancing engagement, creativity, and responsibility among learners. In contrast, authoritarian styles often create dependency, compliance, and reduced intrinsic motivation, while laissez-faire approaches may encourage autonomy but risk generating disorganization and social fragmentation.

This study argues that the educational leader must integrate modern pedagogical approaches with cultural and societal contexts, balancing innovation with values and traditions. The discussion highlights the need for teacher training programs that cultivate democratic leadership competencies, equipping educators to act not only as knowledge transmitters but also as facilitators of psychosocial development and ethical citizenship. By situating the Lippitt and White model within contemporary educational discourse, the article contributes to a nuanced understanding of how leadership choices determine the overall psychological well-being and social cohesion of classroom communities.

Citation. Makhloufi A.. (2025). Educational Leadership Styles and Their Influence on the Psychological and Social Climate of the Classroom Group: Revisiting the Lippitt and White Experiment as a Foundational Model in Pedagogical Practice. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 796–808. https://doi.org/10.56352/sei/8.11.62

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 01.01.2025	Accepted: 12.07.2025	Published: 10.09.2025 (available online)

1. Introduction

Teaching through modern approaches has become a strategic choice. This attempt therefore revolves around the most important roles of the teacher and the techniques of his facilitation, as a key feature indicating the degree of their importance at the didactic and pedagogical level. Accordingly, it is appropriate for the teacher to assume new and effective roles that are in harmony with the spirit of democracy and the achievements of modern education, without, however, neglecting the foundations, values, cultural specificities, and national constants of our society. Learning, in fact, is a process that carries both stimulation and difficulty at the same time, and learning styles differ and vary among individuals, which makes the learning process for each person a complex task. In order for curricula and teaching methods to become more effective in producing the desired human being, it is essential to raise the efficiency of the teacher, to improve his competence in teaching, and to train him in effective facilitation—something that cannot be achieved except through a comprehensive understanding of leadership styles and facilitation methods that make the learning process easier for the learner (Al-Sayyid, 1998, p. 27).

Through this paper, I will attempt to answer the following questions: What is the concept of educational leadership within the classroom group? What are the effective leadership styles that influence the psychological and social climate of learners? And what is the model that society aspires to?

First: Terms and Concepts

1. Definition of Leadership

According to Al-Qaryouti (2000), leadership is defined as: *"the ability of a person to influence others in such a way that makes them accept his leadership voluntarily and without any legal obligation, due to their recognition of his role in achieving their goals and his expression of their hopes and aspirations, which enables him to lead the members of the group in the manner he deems appropriate."*

Operationally, leadership may be defined as: *"the ability to influence the behavior of workers, directing them, and motivating them to work in order to achieve the predetermined objectives."*

2. Definition of Educational Leadership

Mohamed Mounir Morsi defines educational leadership as: *"the ability to direct the behavior of individuals in a specific situation, since at its core it is based on the interaction that takes place between the leader and the members of the group"* (Morsi, 1998, p. 34).

It may also be defined as: *"leading the workforce in the educational process, and improving social interaction among its members in an effective way that achieves their cooperation, raising their level of performance to the highest possible degree, while maintaining the structure and cohesion of the group"* (Abouda, 1995, p. 141).

Operationally, educational leadership may be defined as: *"the ability to influence the behavior of learners, to direct them, and to motivate them to exert effort and diligence in order to achieve the intended educational goals."*

3. Definition of Leadership Style

Al-Sharif (2004) defines leadership style as: *"the activity practiced by the leader within the organization to influence the behavior of those working with him, and to make them cooperate in achieving the desired objectives and in improving the level of job performance."*

Hassan and Al-Ajmi (2007) refer to leadership style as the behavior adopted or pursued by the leader in any situation with the aim of achieving the intended objectives, and which subordinates emulate in their own behaviors.

Operationally, leadership style in the framework of this study is defined as the behavior exercised by the educational leader in dealing with learners, which influences their level of performance, their behavior, their respect, their loyalty to him, and their willingness to achieve the desired objectives, as measured through the Leadership Styles Questionnaire.

4. Definition of Educational Leadership Styles

Studies that addressed the behavioral characteristics of the leader and his way of exercising influence over others classified leadership into **three main styles**:

- Democratic Leadership
- Autocratic (Dictatorial, Authoritarian) Leadership
- Laissez-Faire (Free, Non-directive) Leadership

In order to clarify the characteristics of each of these styles, we shall examine them in some detail.

4-1. Democratic Leadership Style

In the democratic style, the leader works to provide opportunities for the workers to carry out the work themselves without intimidation or coercion, but rather on the basis of sound human relations, participation in decision-making, exchanging opinions, and delegating authority to those working with him. Al-Badri (2001) describes it as: *"a human and collective leadership."* Al-Tawil, for his part, characterizes the democratic leader as tolerant and open in his dealings with all employees.

Al-Nimr and others (1997) indicate that democratic leadership is characterized by collective organization. However, this style of leadership requires the leader to trust the workers, to give them space to present their ideas, and to allow them to freely discuss work issues, with the necessity of respecting these ideas and seeking to respond to them (Yaghi, 1996).

Among the most important positives of the democratic style is that it helps in training and preparing future leaders by giving middle leaders the opportunity to discover and develop their abilities. It also raises workers' morale, satisfies their needs, and makes them feel job satisfaction, thus reducing complaints. All of this motivates them toward work with enthusiasm and mastery (Kanaan, 1992).

On this basis, the democratic style can be considered the most effective and successful leadership style in developing and improving the institution and its workers, as it raises their morale, strengthens their belonging to their workplace, and enhances their loyalty to their leader, all of which positively reflects on performance and, consequently, increases productivity. However, the application of this style depends on the leader's own skills, the level of awareness of subordinates, their readiness to participate in decision-making, and their acceptance of the opinions of others. Democratic behavior is not inherited but rather acquired through training and by providing a suitable environment for it.

Assaf (1982) notes that despite the benefits and advantages of democratic leadership, it can sometimes produce negative results; for example, in situations that require urgent decisions, involving workers and consulting them through meetings and getting to know their different points of view consumes time and slows down the decision-making process and the implementation of necessary measures.

4-2. Autocratic Leadership Style

This style is also called authoritarian, despotic, or dictatorial. In it, all authority is concentrated in the hands of the leader, who makes decisions unilaterally, while subordinates must follow instructions without discussion; otherwise, they may face the harshest forms of punishment (Al-Dhahabi & Al-Azzawi, 2005).

Under this style, communication flows only in one direction—from top to bottom—so others cannot deliver their opinions to the leadership, and if such opinions reach the leader, they may be ridiculed or disregarded. The autocratic leader believes he knows better than others what should be done, therefore he does not delegate authority, and he uses coercive methods based on threats and intimidation. He also occupies himself with monitoring every small and large detail of the work.

Some researchers divide the autocratic style into three main forms (Hashim, 1980):

- **The strict autocrat:** all authority is subject to him, and he manages affairs entirely alone.
- **The benevolent autocrat:** occasionally uses some positive methods such as rewards to gain the loyalty of subordinates and avoid their negative attitudes toward him.
- **The tactful autocrat:** creates the impression among subordinates that they are participating in decision-making by holding some meetings and discussions with them, but ultimately he retains sole decision-making authority.

Although the autocratic leadership style may succeed in controlling work and increasing productivity, it has several disadvantages. Al-Najjar (1980) and Al-Nimr et al. (1997) emphasize the following:

- Subordinates dislike their leader, and their morale declines.
- It kills the spirit of creativity and initiative among them.
- Cooperation between the leader and the workers disappears.
- Work performance becomes tied to the leader's presence; once the leader is absent, the work comes to a halt.

4-3. Laissez-Faire (Free) Leadership

This style is known by several names, most commonly free leadership, permissive leadership, non-directive leadership, or chaotic leadership. In this case, the leader is almost entirely absent from the work environment, leaving workers complete freedom to act as they wish. The leader's role is limited to meeting subordinates' needs for resources and information necessary to perform their tasks, without influencing them or exercising authority over them (Yaghi, 1996).

If autocratic leadership neglects the role of subordinates, laissez-faire leadership neglects the role of the leader. Undoubtedly, the absence of the leader's role results in the emergence of competing informal leaders, and leads to feelings of instability among workers.

Abu Samra and others (2003) argue that the laissez-faire style is not leadership at all and does not even rise to the level of leadership. They consider it instead to be *"laissez-faire management,"* since leadership presupposes the exercise of influence over workers—something entirely absent in the laissez-faire style.

However, this style may be appropriate in some institutions such as universities and research centers. Despite the negative consequences of laissez-faire leadership—such as weak cooperation among workers, absence of team spirit, and lack of discipline and organization—it also has certain characteristics. For instance, it gives subordinates the chance to work freely, to evaluate their own performance independently, and to rely on themselves. In addition, it facilitates communication between the leader and the subordinates (Kanaan, 1992).

5. Definition of the Psychological and Social Climate

5-1. Climate in Language

The word *mounakh* (climate) is a relatively recent term in the dictionary. In *Al-Ra'id Dictionary*, the word is derived from *anākh, inākhah (nawkh)*. It is said: *anākh al-jamal* (the camel knelt down), meaning: he made the camel kneel, or he made it settle in a place; it also means to reside there, or to come down with humiliation or otherwise (Masoud, 1981, p. 242).

5-2. Climate in Terminology

The term *climate* includes the organizations, individuals, and groups that benefit from these organizations and interact with them. Climate is the main source from which the organization derives the types of resources necessary for its operations. Moreover, climate encompasses systems and rules that regulate work, organize relationships, and define what is acceptable and what is rejected in terms of types and fields of activity.

The psychological literature points to two dimensions of climate: one is specific to the individual, and the other is related to the systemic (organizational) dimension, that is, the systems and determinants surrounding the individual. Each dimension is intertwined and interacts with the other (Al-Sulami, n.d., pp. 12–13).

5-3. Definition of the Psychosocial Climate

It was defined in the *Dictionary of Psychology* as follows: *"It is the qualitative aspect of interpersonal relationships, which appears as a total sum of the psychological states that either facilitate or hinder productive activities and the comprehensive development of the individual within the group."*

Koys and DeCotiis (1991) defined the psychosocial climate as *"a perceptual phenomenon in which the individual participates widely as a supposed organizational unit, whose primary function is to shape individual behavior in accordance with the requirements of the organization."*

6. Definition of the Classroom Group

The classroom group has been defined in light of its nature, its functions, and its objectives—particularly the role it plays in the affective life of the child (the pupil)—through numerous definitions. For Johnson and Banny (1974), it is defined as: *"a group of individuals who collectively perceive their unity, and who adopt the same behavior toward the school environment."*

Others, such as Dubon (1982) and Journet (1980), define the classroom group through its characteristics and consider it a group of direct interaction, since its members influence one another and because it affects them through the norms that are formed within it. It is an organized work group established to achieve a specific objective. It is also a formal group, because its members were designated to be a group and did not choose it themselves, and because the institution imposed upon them—in the classroom group, as in any small group—a set of variables that generate its dynamics.

These variables can be observed directly or through instruments such as tests, questionnaires, interviews, and role-playing. The classroom, as a psychosocial space, is characterized by being a group that aims, through its very existence, to achieve a specific task under specific conditions. Through its organization, it seeks to fulfill educational purposes and to impart knowledge such as the acquisition of skills and learning experiences, within regulated conditions and according to clear methods and means.

Thus, the essence of the classroom group can only be understood within the framework of the characteristics of the small group, in which work is considered the most important common principle among its members, with the addition of certain features specific to the educational classroom that distinguish it from other forms of organization (Al-Luhiyyah, 2007, p. 64).

Second: Importance of the Topic

The importance of this topic lies in the fact that it addresses one of the fundamental factors influencing classroom dynamics, namely the *style of the educational leader* adopted by the teacher in directing the educational process. The leadership style is not only reflected in students' academic performance, but its impact also extends to the psychological and social climate that prevails in the classroom group, in terms of the level of interaction, the sense of belonging, security, and motivation. Moreover, the reliance of the subject on a pioneering experiment in social psychology, conducted by *Lippitt* and *White* under the supervision of *Kurt Lewin*, adds a scientific dimension that allows for a deeper understanding of the nature of the relationship between leadership styles and the educational climate. This, in turn, contributes to equipping teachers and educators with more conscious and effective practices in improving the classroom climate and preparing learning conditions that support learners' growth (Lippitt & White, 1943, p. 503).

Third: Previous Related Studies

1- The study of Mahmoud Fathi Okasha from the University of Alexandria and Dawood Abdulmalik Al-Hadabi from the University of Sana'a (1991) on the *ideology of classroom control*. This study focused on some methods of classroom management, including leadership styles and teacher personalities. It was based on the study of *Lippitt and White (1943)* in defining two leadership styles: *dictatorial and democratic*.

By the *dictatorial or authoritarian teacher*, the study meant the teacher-centered classroom, in which the teacher maintains high control, the activity is formal or rigid, with minimal participation allowed for students, and communication is centered around the teacher. The *democratic teacher*, on the other hand, is the one who presides over a learner-centered classroom, with more distributed authority, greater independence for the learner, emphasis on students' ideas, concern for divergent thinking, and allowance of high verbal activity for students. Communication is open between the teacher and the students, and among the students themselves. The results of the study indicated that novice teachers at the beginning of their career, as well as student-teachers, were more authoritarian in classroom control. Moreover, high school teachers were found to be more authoritarian than elementary school teachers.

2- The study of *Willower and his colleagues (1967)* on the ideology of classroom control, which focused on the authoritarian style and the humanistic style. The authoritarian style is characterized by concern with maintaining order, lack of trust in students, and the use of punishment to control the class. By contrast, the humanistic style is characterized by viewing students as individuals, providing an atmosphere that allows them to fulfill their desires and needs, and helping them to learn through cooperation, interaction, and the development of self-discipline instead of imposing order upon them.

3- Cheng (1994) emphasized the existence of a strong correlational relationship between the teacher's leadership style in the classroom and the psychosocial climate, as well as between this climate and students' effective performance. In general, personality is determined by social and environmental factors (Pervin, 1980, p. 13).

From the foregoing, it is clear that the two variables, namely ego strength and emotional tranquility, may be influenced by the psychosocial climate, since both are social products. Ego strength expresses sound perception, while psychological security—as emotional tranquility has been called—is the result of experiences and life situations. Hamed Zahran defined the concept of psychological security as emotional or psychological tranquility, explaining it as: *"a state in which the satisfaction of needs is guaranteed and not exposed to danger,"* such as the need for love and affection, the need for safety, physiological needs, the need for self-esteem, and self-respect. Sometimes the satisfaction of needs occurs effortlessly, while at other times it requires striving and exertion to achieve it (Zahran, 1984, p. 297).

Fourth: The Experiment of Lippitt and White on Leadership Styles and Their Influence on Learners' Behavior (the Classroom Group)

The styles of the educational leader and his facilitation techniques related to the act of learning ultimately aim at enabling learners to acquire certain abilities, to develop them, or to correct them, in a way that serves the achievement of the competencies set at the end of a specific program or part of it. Indeed, modern experimental research on authority, leadership, and methods of management and facilitation has, over the last decades, enabled psychologists and educators to identify three principal styles of facilitation, each characterized by its own features and its general outcomes on the productivity, behavior, and performance of groups. Each of these styles has profoundly different effects on the group, and the adoption of any one of them leads to calculated repercussions with respect to the group's work, its efficiency, and its progress toward its goals.

1- The Experiment and Its Field Procedures

(Keeping the French text as it is, without translation, as per your instruction — only ensuring orthographic consistency if necessary):

Cet étude classique réalisée en 1939 par Lewin, Lippitt White sur trois styles de leadership et les différents climats sociaux qui en résultent, à savoir autocratique, démocratique et laissez-faire. Une extension graduelle de la théorie

de champ lewinienne pour inclure des motivations inconscientes dans le comportement individuel et dans le comportement de groupe a permis d'élargir l'influence déjà considérable de cette recherche sur les sciences du comportement. Deux événements récents m'ont incité à écrire cette communication: (1) le 100e anniversaire de la naissance de Kurt Lewin en 1990 (Maccoby, 1992); et (b) un élargissement de la théorie de champ lewinienne pour englober les motivations inconscientes. (Lewin, K, &,1939, 276-278).

Cette théorie du leadership a été reprise par les psychologues scolaires dans la mise au point d'un modèle schématique de l'éducation des enfants. En effet on distingue trois étapes au cours desquelles l'enfant est éduqué de manière paternaliste (interdiction de sortir le soir à 4 ans), puis de manière participative (possibilité de sortir mais négociée avec les parents), et enfin laissé libre (majorité, libre décision de ses actes.

Lewin confirme ces résultats en 1943 avec ses expériences sur le changement d'attitude alimentaire des ménagères américaines. Pour modifier durablement les habitudes alimentaires, il apparaît plus aisé d'en faire découvrir la nécessité aux intéressées au travers d'échanges verbaux. (Manuel, pp. 46-47).

2- Defining the Objectives, Boundaries, and Sample of the Experiment

2-1- Objectives of the Experiment:

- To study the impact of the facilitator's behavior (the teacher) on the behavior of the classroom group (the pupils), whether negatively or positively, when he adopts a particular leadership style: democratic, autocratic, or laissez-faire.

- To study the reaction of the classroom group when moving from one of these climates to another that is different in nature.

2-2- Boundaries of the Experiment:

- **Spatial boundaries:** A primary school.

- **Temporal boundaries:** The year 1943.

2-3- The Sample:

The number of children was 20 pupils from a single class, chosen randomly, all of whom were 10 years old. The classroom group was divided into four clubs, with each club consisting of 5 children and each one given a specific name.

Lippit et White distinguent trois styles de leadership utilisés spontanément par des enfants dans des groupes d'un école primaire:

Models of the Climates Tested on the Groups:

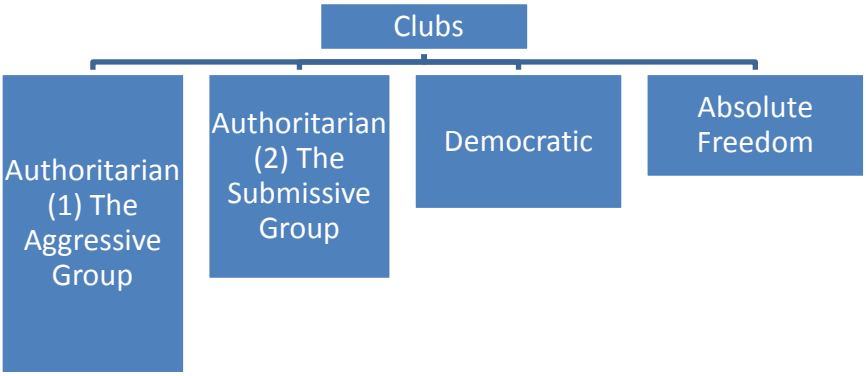


Figure (1) illustrates the three leadership climates.

Note: The autocratic climate included two groups.

3- Experiment Control

The four clubs were homogeneous in terms of personal and physical traits, level of intelligence, inclination to obedience, readiness for cooperation with the group, as well as types of social and personal relations. The meeting rooms were identical in every detail, whether in terms of furniture or content, and the forms of activity in all the clubs were unified. To ensure such homogeneity, intelligence tests, teachers' assessments, and the sociometric scale of social relations were employed.

3-1- The Democratic Group

In the democratic group, the members met together and collectively determined the types of activities, the raw materials, and the tools required to carry out the chosen task. After discussion, they decided to construct models of wooden airplanes.

3-2- The Autocratic Group

In the autocratic group, the program was imposed on the members without allowing them to have a say in its choice.

- *Dans la condition « directive » l'animateur est directif dans sa passation d'ordres et ceux-ci ne peuvent pas être discutés (pas de rétro-action possible). L'animateur occupe donc ici un statut de chef assimilable au paternalisme.*
  ("In the 'directive' condition, the leader is commanding in giving orders, and these orders cannot be discussed or subjected to feedback. The leader thus occupies the status of a chief comparable to paternal authority.")
  (Lewin & White, 1939, p. 290).

3-3- The Laissez-faire Group

In the laissez-faire group, raw materials and tools necessary for the activity were provided, but no specific activity was determined for them. This experiment was conducted by four trained facilitators, well-versed in educational psychology and social psychology. They alternated among the four clubs, taking turns to adopt each of the social climates, and were instructed on the roles they had to assume in each condition. Observation records were kept for

each group, and interviews were conducted with the children, their parents, and their teachers both during and after the experiment (Khwais, 2017, p. 14).

4- Description of the Social Climates

4-1- Democratic Climate

The club's policy and activities were decided upon through group discussion and collective decisions based on majority voting, with the leader's encouragement and active participation. The objectives of the activity were clearly known to all, and the steps were discussed democratically. Each child was free to choose his workmates and the tasks he wished to perform. The leader made use of reward and punishment in an objective and impersonal manner, participating in the group morally rather than materially. When asked for advice, he responded flexibly by offering several possible solutions and leaving the members free to choose among them (Al Abdullah, 2012, p. 49).

- *Le leader démocratique : participe à la vie du groupe, mais ne donne pas d'ordres, fait des suggestions et encourage les autres enfants dans leurs productions.*
  ("The democratic leader participates in the group's life but does not give direct orders; he makes suggestions and encourages the children in their productions.")

- *Dans la condition « participative » l'animateur est participatif avec tous les membres du groupe. L'apprentissage est basé sur l'interaction entre les membres du groupe et l'animateur occupe un poste d'animation dans l'apprentissage.*
  ("In the 'participative' condition, the facilitator engages with all members of the group. Learning is based on interaction among the members, while the facilitator assumes a role of guidance in the learning process.")
  (Lewin & White, 1939, p. 295).

4-2- Autocratic Climate

In this climate, the club's policy and activities were determined solely by the leader. The steps were dictated one by one, without the goals being previously known to the members. The children had no freedom to choose their workmates, as the leader assigned both the task and the partners. Reward and punishment were used in a subjective and personal way. The leader did not share in the group's activity but intervened from time to time to explain and clarify the method of work explicitly (Khwais, 2017, p. 15).

- *Dans la condition « directive » l'animateur est directif dans sa passation d'ordres et ceux-ci ne peuvent pas être discutés (pas de rétro-action possible). L'animateur occupe donc ici un statut de chef assimilable au paternalisme.*
  ("In the 'directive' condition, the facilitator is commanding in issuing orders, and these cannot be discussed. He thus occupies the position of a leader comparable to paternal authority.")
  (Lewin & White, 1939, pp. 297–298).

4-3- Laissez-faire Climate

In this climate, the members enjoyed complete freedom in choosing the type of activity, their behavior, and even whether to work or not, with minimal involvement from the leader. Objectives were set with total freedom, and workmates were chosen without restriction. The leader was entirely neutral in his behavior and made no attempt to evaluate or organize the group's activity. His role was limited to pointing out the available resources and tools and showing readiness to provide advice or assistance if requested. No system of reward or punishment was applied; instead, there was total neutrality.

- *Le leader permissif : apporte ses connaissances techniques, mais ne cherche pas à s'impliquer émotionnellement dans les activités de group.*
  ("The permissive leader contributes his technical knowledge but does not seek emotional involvement in the group's activities.")

- *Dans la condition « laissez-faire » l'animateur est en retrait face aux demandes du groupe. Son rôle est de surveiller les activités sans intervenir dans le groupe.*
  ("In the 'laissez-faire' condition, the facilitator withdraws in response to the group's demands. His role is to supervise activities without intervening in the group.")
  (Lewin & White, 1939, pp. 298–299).

5- Results of the Experiment

5-1- Results regarding mutual trust:

5-1-1- In the democratic club:

A general atmosphere of mutual trust and spontaneous responsiveness prevailed among the members themselves as well as between them and the leader. The children would share their problems and even their secrets with him. Some of them even offered parts of their production as gifts to the leader. Members were also keen to receive appreciation from one another. Thus, the democratic climate was characterized by greater friendliness and less discontent.

5-1-2- In the autocratic club:

Members became more dependent on the leader, constantly seeking to flatter him and draw his attention in order to gain rewards and avoid punishment. There was no genuine atmosphere of mutual trust, neither among the members themselves nor between them and the leader. It became evident that the autocratic climate fosters feelings of resentment and hostility towards the leader.

5-1-3- In the laissez-faire club:

The level of mutual trust was intermediate, falling between the democratic and autocratic climates.

5-2- Results regarding emotional behavior:

5-2-1- Democratic behavior:

In this climate, there were no signs of anxiety. Instead, members experienced feelings of stability, psychological comfort, and peacefulness.

5-2-2- Autocratic behavior:

This climate was dominated by feelings of rejection, frustration, and deprivation, which in turn led to anxiety, instability, irritability, and a decline in group morale (Hanafi, 2002, p. 56).

5-2-3- Laissez-faire behavior:

Here, the level of discontent was moderate, situated between that of democracy and autocracy. It is useful to support this finding with a statement by Gibb, who defined the affective relationship between teacher and learner in the educational setting as being based either on love or on fear:

- If love is strong and fear is strong, the relationship is **"parental."**
- If love is strong but fear is little or absent, the relationship is **"pure."**
- If love is little or absent and fear is strong, the relationship is **"tyrannical."**
  (Gibb, 1954).

5-3- Results regarding the leader's complete withdrawal from the club:

The leaders deliberately absented themselves for short periods from some meetings in all the clubs. The results were as follows:

5-3-1- In the democratic climate:

Production in the absence of the leader was equal to production in his presence. Similarly, the level of activity remained consistent whether he was present or absent.

- *Ils constatent qu'avec un leader démocratique, la production est presque semblable à celle obtenue avec un leadership autoritaire, puisque la quantité est meilleure alors que la qualité est légèrement inférieure.*
  ("They observed that under a democratic leader, production is almost similar to that obtained under authoritarian leadership: the quantity is superior, although the quality is slightly lower.")
  (Lewin & White, 1939, p. 300).

5-3-2- In the autocratic climate:

The group showed itself capable of sustained work only in the presence of the leader. However, whenever the leader was delayed, the work was also delayed, and when he left, the activity stopped altogether; members neither resumed previous tasks nor initiated new ones.

5-3-3- In the laissez-faire climate:

An atmosphere of chaos and lack of cohesion prevailed among the team members.

- *À l'inverse, le leader permissif est un style improductif, car apparaît la démotivation au travail, qui place le sujet dans une forme d'apathie et de retrait. Le leader démocratique a l'avantage de permettre que le leader s'efface au profit du groupe qui doit alors s'autogérer. La frustration des membres diminue.*
  ("Conversely, the permissive leader represents an unproductive style, as it results in a loss of motivation for work, placing individuals in a state of apathy and withdrawal. The democratic leader, however, has the advantage of being able to step back in favor of the group, which then manages itself. This reduces members' frustration.")
  (Lewin & White, 1939, pp. 300–301).

5-4- Results of the Experiment in terms of Social Behavior

5-4-1- In the democratic climate:

There were clear signs of friendliness among the members in their social behavior. The feeling of "we" (collective identity) was stronger than the feeling of individuality. Group morale was higher than in the other two groups.

5-4-2- In the autocratic climate:

In the aggressive group, members displayed hostile behaviors toward one another, with some aggression also directed toward the leader. Their behavior was also characterized by destructiveness, as they destroyed the models they had previously made. On the other hand, in the submissive group, members showed compliance and strong dependence on the leader, accompanied by an inability to engage in cooperative work and frequent low-voiced conversations.

5-4-3- In the laissez-faire climate:

Friendly signals were observed among members toward one another, but at a level lower than in the democratic and autocratic (aggressive) climates, though higher than in the autocratic (submissive) climate.

5-5- Results of the Experiment in terms of the Succession of Social Climates

5-5-1- Transition from autocracy to democracy or to laissez-faire:

This shift initially resulted in an outburst of violent reactions, especially among individuals who had previously been subjected to the autocratic system. Such an outburst indicated the repression and intense tension that members had felt under autocracy. However, this behavior did not last long, as the children eventually adapted to the democratic or laissez-faire climate.

5-5-2- Transition from autocracy to democracy or laissez-faire, then back to autocracy: This sequence was met with strong opposition, particularly after the members had experienced the democratic climate.

6. Summary and Commentary on the Experiment's Results:

This experiment indicates that democratic leadership is the style that should be cultivated and reinforced. The results of the experiment also show that just as an individual rejects a system or authority imposed externally upon them, they likewise do not feel comfortable in the complete absence of any guidance or direction, nor in the absence of a goal to orient themselves toward. An individual's need for freedom is thus balanced by their need for regulation within the framework of a democratic climate (Issawi, 1992, p. 87).

Conclusion:

Effective educational leadership plays a fundamental role in supporting the transformation of the school model. This necessitates that institutes and training centers affiliated with the Ministry of Education or Higher Education pay greater attention to providing effective academic programs for preparing school leaders capable of generating genuine improvement in students' performance. Furthermore, the study of group leadership within the classroom—what is referred to as the "dynamics of the group"—has provided an opportunity for those interested in this field to explore the latest theories, whether they pertain to psychological or sociological approaches that examine both the individual and the group simultaneously.

This experiment also encourages us to consider the psychological and social needs of learners during the actual practice of the pedagogical process. For a classroom group to achieve its objectives—which are centered on acquiring the competencies necessary to face various life situations—it is essential that a type of positive dynamism occurs. This dynamism allows members of the group to develop their skills, modify their behaviors in the desired direction, and acquire the essential values that enable them to confront challenges in their lives, all through practice in educational situations within the classroom (Maher, 2002, p. 52).

Acknowledgments

The author expresses sincere gratitude to the University of Oran 2 – Mohamed Ben Ahmed for providing academic and institutional support during the preparation of this research. Special appreciation is extended to colleagues in the Department of Education for their constructive feedback, and to the students whose engagement in classroom practices continues to inspire the exploration of effective educational leadership.

Conflict of Interest Statement

The author declares no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

1. Al-Abdullah, K. I. (2012). *Modern classroom management: A contemporary vision*. Amman: Dar Al-Fikr for Printing, Publishing, and Distribution, p. 49.
2. Jassim, M. Al-Dhahabi, & Najm, A. Al-Azzawi. (2005). *Principles of public administration – A comprehensive strategic perspective*. Baghdad.

3. Al-Hasan, L. (2007). *Social psychology and its educational applications* (1st ed.). Kenitra, Morocco: Dar Al-Harf for Publishing and Distribution.
4. Hassan, H., & Al-Ajmi, M. (2007). *Educational administration*. Amman, Jordan: Dar Al-Maseera for Publishing and Distribution.
5. Hanafi, A. A. (2002). *Classroom management: Concepts and strategies*. Cairo: Maktabat Al-Rushd, p. 56.
6. Khuweis, H. (2017). *Patterns of educational leadership and their impact on classroom management*. Amman: Dar Al-Ayyam for Publishing and Distribution, p. 15.
7. Al-Dhahabi, A. R., & Al-Azzawi, Q. H. (2005). *Educational administration: Its concepts, foundations, and applications*. Amman: Dar Al-Shorouk.
8. Zaki, M. H. (1980). *Behavioral aspects in management*. Kuwait: Agency for Publications.
9. Saud, M. Al-Nimr, et al. (1997). *Public administration: Principles and functions*. Riyadh, Saudi Arabia: Al-Farazdaq Press.
10. Al-Salmi. (n.d.). *Al-Raed Dictionary* (4th ed., Vols. 1–2). Egypt: Dar Al-Ilm.
11. Al-Sayyid, A. H. (1998). *Effective teaching strategies*. Cairo: Dar Al-Fikr Al-Arabi.
12. Al-Sharif, M. M. (2004). *Educational administration: Concepts and foundations*. Amman: Dar Al-Fikr for Printing and Publishing.
13. Tarek, A. Al-Badri. (2001). *Leadership and administrative methods in educational institutions*. Amman, Jordan: Dar Al-Fikr for Printing and Publishing.
14. Talal, A. M. Al-Sharif. (2004). *Leadership styles and their relation to job performance from the perspective of employees in the Mecca administration* (Unpublished master's thesis). Naif University for Security Sciences, Riyadh, Saudi Arabia.
15. Abdul-Ghani, A. (1995). *Philosophy of elementary education and its applications* (1st ed.). Cairo, Egypt: Dar Al-Fikr Al-Arabi.
16. Abouda, A. Q. (1995). *Educational leadership: A theoretical and applied approach*. Amman: Dar Al-Fikr.
17. Assaf, S. M. (1982). *Educational leadership: Concepts and foundations*. Amman: Dar Al-Furqan.
18. Akasha, & Al-Haddabi. (1991). Ideology of classroom control. *Contemporary Education Journal*, 18, August. Cairo, Egypt.
19. Issawi, A. R. (1992). *Social psychology*. Cairo: Dar Al-Ma'arifa Al-Jamia'iya.
20. Maher, A. (2002). *Organizational behavior: An approach to skill building*. Alexandria, Egypt: University Press.
21. Al-Qaryouti, J. A. (2000). *Organizational behavior*. Amman: Dar Wael for Publishing.
22. Maher, H. (2002). *Group dynamics in the educational field*. Casablanca: Dar Al-Aman.
23. Mohamed, A. F. Y. (1996). *Job satisfaction level of employees in the lower geographic center in Amman, Jordan*.
24. Mohamed, A. N. (1980). *Scientific foundations of organizational theory and administration*. Damascus: Dar Al-Fikr.
25. Mohamed, Q. Al-Qaryouti. (2000). *Organizational behavior in educational institutions management*. Amman, Jordan: Dar Jarir for Publishing and Distribution.
26. Mohamed, M. M. (1998). *Educational leadership test and a set of objective tests in educational sciences* (1st ed.). Cairo, Egypt: Dar Alam Al-Kutub.
27. Mahmoud, A. A., Qamar, A. Q., & Ahmed, F. J. (2003). Problems facing faculty members in Palestinian universities. *Journal of the Union of Arab Universities*, Palestine.
28. Mahmoud, A. (1982). *Principles of management*. Alexandria, Egypt: Dar Al-Jam'iyat.
29. Mona, K. (2011). *Faces of the leader*. Beirut, Lebanon: Dar Al-Saqi, e-book edition.
30. Nawaf, K. (1992). *Administrative leadership*. Amman, Jordan: Dar Al-Thaqafa for Publishing.
31. Hashim, M. (1980). *Administrative leadership: Its foundations and theories*. Cairo: Maktabat Al-Nahda Al-Masriya.
32. Beauvois, J.-L., Joule, R.-V., & Monteil, J.-M. (1993). *Manuel de psychologie sociale* (2nd ed.). Paris: Presses Universitaires de France.
33. Cheng, Y. C. (1994). Teacher leadership style: A classroom-level study. *Journal of Educational Administration*.
34. Gibb, J. (1954). Leadership. In G. Lindzey (Ed.), *Handbook of social psychology* (Vol. 2). Addison-Wesley.

35. Koys, D. J., & Decotiis, T. A. (1991). Inductive measures of psychological climate. *Human Relations*, 44.
36. Lewin, K., Lippitt, R., & White, R. K. (1939). Patterns of aggressive behavior in experimentally created social climates. *Journal of Social Psychology*, 10. New York.
37. Lippitt, R., & White, R. K. (1943). The "social climate" of children's groups. In R. G. Barker, J. S. Kounin, & H. F. Wright (Eds.), *Child behavior and development: A course of representative studies* (pp. 503–517). McGraw-Hill.
38. Pervin, L. A. (1980). *Personality: Theory and research* (3rd ed.). New York: John Wiley & Sons.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Globalisation, Electronic Upbringing, and the Transformation of Family Socialization: Challenges, Risks, and Opportunities in the Age of Digital Connectivity

Abdelkader Chahed
Blida University
Algeria
E-mail: dr.chahedabdelkader@gmail.com

Zoulikha Boumediene
Laghouat University
Algeria

Ahmed Hadjadj
Laghouat University
Algeria
E-mail: ah.hadjadj@lagh-univ.dz

Mohamed Kerroum
Laghouat University
Algeria
E-mail: m.kerroum@lagh-univ.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Globalisation; electronic upbringing; family socialisation; digital culture; generational change

Abstract

The accelerating pace of technological innovation and global interconnectedness has profoundly reshaped social life and the processes of family upbringing. Globalisation, reinforced by digital communication technologies, the internet, and satellite media, has introduced new opportunities for learning, cultural exchange, and access to knowledge, while simultaneously creating complex risks that threaten the stability of family dynamics and the psychosocial development of younger generations.

This study examines the dual impact of globalisation on family socialisation, with particular focus on the phenomenon of electronic upbringing—an emerging process in which digital devices and global media environments play a central role in shaping children's values, behaviors, and identities. While globalisation and technological progress facilitate exposure to diverse perspectives and strengthen educational opportunities, they also present profound challenges related to excessive media consumption, inadequate parental monitoring, cultural dissonance, and the erosion of traditional value systems.

The analysis underscores the urgent need for new approaches to family education that integrate traditional

socialization practices with contemporary digital realities. It argues for the establishment of pedagogical strategies and parental guidance models that harness the benefits of globalisation and electronic tools while mitigating their risks. By situating electronic upbringing within the broader sociological and pedagogical discourse, this paper highlights the importance of cultivating resilience, critical digital literacy, and cultural awareness in younger generations. The study ultimately contributes to a more comprehensive understanding of how families can navigate globalisation's opportunities and challenges to ensure balanced psychosocial development and the sustainable transmission of values across generations.

Citation. Abdelkader Ch., Zoulikha B., Ahmed H., Mohamed K. . (2025). Globalisation, Electronic Upbringing, and the Transformation of Family Socialization: Challenges, Risks, and Opportunities in the Age of Digital Connectivity. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 809–828. https://doi.org/10.56352/sei/8.11.63

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 20.02.2025	Accepted: 08.08.2025	Published: 12.09.2025 (available online)

Introduction:

Social globalisation refers to the standardisation of societies worldwide according to prevailing social norms in the Western world, through which the family is undermined and, ultimately, destroyed.[1] This issue places significant weight on Arab societies in general and Islamic societies in particular, with a special emphasis on the family, which constitutes the basic structure for building our communities. It is a subject fraught with challenges arising from Western civilisation. While this civilisation has brought development and prosperity to all fields of life, economic, social, and scientific, it has also left behind adverse effects that have hurt society. People have come to feel that life was simpler and more comfortable in the past, as they lived within a secure and reassuring environment, with a life free from complexity.

The concept of "globalisation," which surged during the late last century, represents the formation of a new global system that now serves as the framework influencing all societal aspects at the local, international, and regional levels. Globalisation has become the dominant force shaping the political, economic, and cultural achievements of the international community, employing mechanisms to serve its objectives, whether negative or positive.[2]

The phenomenon of globalisation, along with its institutions and technologies, has crystallised over the past two decades through a range of policies intended to achieve its strategic goal: the reshaping of the economic systems of all states and transforming them into market economies to integrate them into the globalised framework of societies. To realise this material goal, globalisation has employed mechanisms with political, social, cultural, and military dimensions that have impacted Arab peoples and societies and their families through the adoption of globalisation policies and programs by their governments. These have been converted into national public policies whose implementation affects the lives of citizens and families primarily, both negatively and positively.[3]

Hans Peter Martin and Harald Schumann, authors of *the Global Trap*, noted that globalisation through modern liberal policies, which rely on unleashing market mechanisms, reducing social services provided by the state, shrinking state intervention in daily life, and limiting the state's role in managing the system, has led to rising unemployment, declining

[1] Kamelia Hilmi, Islamic World Committee for Women and Children, Social Globalisation, internet, www.iicwc.org, Islamic Organisations CIO.
[2] Badr Anad Al-Ghurairi, "Globalisation: A Method of Imperialist Domination," International Studies Journal, International Studies Centre, Baghdad, No. 13, 2001, p. 2.
[3] Jehan Abu Zaid, Youth and the Millennium Development Goals in the Arab World, Preliminary Working Paper (Arab Youth version), presented at a workshop in Sana'a, internet.

wages, and worsening living standards. These factors now shape the contours of the globalised social system and the associated social life.[4]

Problem Statement:

Many sociologists consider childhood experiences a fundamental determinant of human behavior. Children quickly receive information and react to it rapidly. The amount of knowledge a child absorbs by the time they reach a certain age surpasses the knowledge they will gain throughout the rest of their life. These experiences have both positive and negative effects. Supporters of modern media and its impact on the child's personality argue that media fosters the social aspects of the child by enabling interaction with others and exchanging conversations. The media also refines the child's emotions and feelings, trains their senses from an early age in listening, following, connecting, and analysing, broadens the child's freedom as a source of knowledge, imparting cognitive and behavioural values, transmitting culture and knowledge, and developing the child's intellectual and mental faculties.

However, there is no doubt that the transformations witnessed in our world today, accompanied by significant technological developments, have affected all aspects of life, particularly the profound changes experienced in social life within the family and their adverse effects on social upbringing processes. Despite the positive aspects achieved and benefits gained by individuals, which cannot be denied due to their importance in daily life, adverse effects have begun to emerge, signalling serious risks and problems that society must recognise and address. One of the most significant changes faced today stems from the concept of globalisation, which has introduced ideas and considerations that connect this concept to daily life, presenting it as a cultural revolution indispensable to people and societies, especially in the context of challenges confronting society and the family. This is evident in the modern technologies promoted by globalisation, such as mobile phones, the internet, and satellite channels, and the hybrid ideas they propagate, which cannot be fully comprehended by traditional minds, particularly in societies with established customs, traditions, and norms. This situation burdens the family with considerable challenges in controlling the upbringing of their children and protecting them through sound socialisation from all imported customs, values, and ideas that have no relevance or connection to reality or thoughts.

Problematic issue:

The problem or risk perceived by Arab societies lies not in the concept of globalisation itself but rather in how it is implemented and the clarification of its dangers. Regional and international conferences and seminars have been convened to identify the sources of this challenge and its most prominent manifestations.[5] It is widely recognised that many who have examined globalisation have focused on economic globalisation. In the economic and financial context, globalisation is understood by Western scholars as the creation of a single, open global market, essentially a return to the ideas of Keynes. While this notion may appear positive in a general sense, its underlying intention is to prioritise the interests of Western countries, facilitating unrestricted circulation of currencies and financial securities in their markets.[6]

However, less attention has been given to its social effects on the family and the risks it poses to the social values, ethics, and socialisation processes of children, resulting in negative consequences for our youth and families and obstructing familial communication and cohesion. Additionally, it impacts cultural identity by breaching community culture and threatening customs, traditions, and constants that preserve and protect societal privacy.

[4] Peter Martin and Harald Schumann, The Global Trap, translated by Adnan Abbas Ali, Alam Al-Ma'rifa Series, Kuwait, 2001.
[5] Mu'adh Ahmed Hasan Al-Hadithi, Globalisation and the Change of Social Values, Master's Thesis, University of Baghdad, Faculty of Arts, 2007, p. 124.
[6] Saleh Al-Quraishi, Globalisation and Its Relation to the Global Economic Movement and Islam's Approach to Addressing Its Issues, Contemporary Islamic Studies, Quarterly Journal Issued by the Islamic Sciences, University of Karbala, Year 2, Issue 3, Rabi' II 1432 AH/2011 AD, p. 104.

Research Questions:

- What are the social risks of the uncontrolled consumption of globalisation within the Algerian family?
- How can the concept of electronic upbringing be integrated into the family's role in the socialisation of children?
- To what extent is the child's culture affected in light of the original cultural constants of the Algerian family?

Research Objectives:

1. To identify the social risks caused by globalisation to the structure of the Algerian family.
2. To reach recommendations that help enlighten minds through promoting positive programmes and limiting the spread of negative values propagated by globalisation, thereby preserving the structure and cohesion of society.

Previous studies:

- Thesis Title: *Socialisation's Demands Under the Impact of the Economic Dimensions of Globalisation: A Study of the Sociology of Families*.
- Researcher: Mohammed Sahar Ali Abdel-Moaty.
- Degree: Doctorate.
- College – Department: Faculty of Arts, Department of Philosophy.
- University: Alexandria University, Faculty of Arts, Department of Philosophy.
- Year: 2011.
- Mu'adh Ahmed Hasan Al-Hadithi, *Globalisation and the Change of Social Values*, Master's Thesis, University of Baghdad, Faculty of Arts, 2007, p. 124.
- Saleh Al-Quraishi, *Globalisation and Its Relation to the Global Economic Movement and Islam's Approach to Addressing Its Issues*, *Contemporary Islamic Studies,* Quarterly Journal Issued by the Islamic Sciences, University of Karbala, Year 2, Issue 3, Rabi' II 1432 AH/2011 AD, p. 104.

Subjects: Economic Sociology

Supervisor: Al-Khawaja, Mohammed Yasser Shibl

This study addresses the requirements of social upbringing within the context of the economic dimensions of globalisation as a sociological study of the family. The research began with an introduction outlining the importance of the topic, the rationale for its study, its objectives, and a review of previous research. The study examined the problem statement and the theoretical framework by presenting the problem and its significance, aims, and research questions, along with the conceptual framework and definitions of the key terms used. It then reviewed prior studies before

exploring the origins and mechanisms of globalisation, including its historical emergence, institutions, mechanisms, and fundamental aspects.

The study proceeded to address the economic dimensions of globalisation and their societal implications by analysing these economic dimensions and their global societal impacts. Furthermore, this research investigated the effects of economic globalisation on family structure, focusing specifically on the Egyptian family. It examined the impacts of economic globalisation on the Egyptian family, its socialisation processes within the family context, and the conditions required for effective family upbringing amid economic globalisation.

The methodological strategy of the study was then presented, including the research model, methodology, unit of study, geographical and temporal scope, and statistical methods applied in the analysis. The field study followed, describing the research community, analysing the field data results, and comparing the findings with those from other studies and research. The study concludes with a summary of the main results obtained throughout the research process.

Concept Definitions

1. **Globalisation (Globalisation):** Linguistically, it simply means making something globally widespread in its reach or application. It is also the process through which institutions, whether commercial or otherwise, expand their global influence or begin operating on a global scale.[7] Globalisation is a term recently introduced into the Arabic lexicon as a translation of the English term "Globalisation" and the French term "Globalisation," both derived from a common Latin root "Glob," meaning the globe or earth.[8] In other words, it signifies "cluster" or "universality". "[9] Globalisation is the new phase emerging from the simultaneous development of information, technological, and economic revolutions, representing a stage of civilisational progress in which humanity's destiny becomes unified or tends toward unification.[10]

2. **The Family (The Family):** In Arabic, the word family implies holding, strength, and nature, as indicated in the Quranic verse: "We created them and strengthened their bonds." (Surat Al-Insan).[11] The family is defined as the primary fundamental social group and is regarded as the social institution exerting a strong influence in educating offspring, imparting a set of values, customs, traditions, and norms through the process of socialisation, which begins primarily within the family.[12]

3. **Socialisation (Socialisation):** This concept is defined as preparing the individual from birth to be a social being and a member of a particular society. The family is the first environment responsible for this preparation, as it receives the newborn, surrounds and nurtures them, teaches social conduct, and imparts the language, cultural heritage, customs, traditions, social norms, and national history. The family applies discipline to eliminate resistance to these attributes and values, instilling their sanctity in the child's self, enabling them to grow into a virtuous member of society. No other environment equals the family in this regard.

4. **Social Change:** The literal meaning of "change" refers to transformation, alteration, or transition from one state to another. When combined with "social," the term indicates transformations related to society, its elements,

[7] Globalisation from an Islamic Perspective, internet, Wikipedia Encyclopedia.
[8] Khalaf Mohammed Al-Jawad, Islam and the Challenges of Globalisation, Al-Naba Magazine, Issue 75, 1426 AH/2005 AD, p. 41.
[9] Baher Al-Ulum Hassan, Globalisation between Islamic and Western Perspectives, Publications of the Institute of Arab and Islamic Studies, London, 1424 AH/2003 AD, p. 31.
[10] Saleh Al-Quraishi, Previous Reference, p. 101.
[11] The Holy Quran, Surat Al-Insan, verse 28.
[12] Abdel Majid Sayed Ahmed Mansour, The Role of the Family as a Tool for Social Control in Arab Society, Arab Centre for Foreign Studies and Sports Training, 1978, p. 14.

systems, processes, or the relationships between its components.[13] Social change is defined as any transformation that occurs within a social organisation, whether in its structure or functions, over a specific period. It encompasses changes in the population composition, social stratification, social systems, patterns of social relations, and values and norms influencing individual behaviour and determining their roles and positions within various social structures to which they belong.[14]

I. Globalisation and Family Structure:

The family faces significant challenges, especially in the twenty-first century. The rapid developments engendered by information technology, modern devices, and technologies that flood global markets have made it difficult for parents to raise their children to shield them from the temptations presented and heard in today's world. This demands strengthening religious conscience in children, distinguishing right from wrong, and utilising technology beneficially. Arab society, particularly Islamic society, serves as a model for other religions as the seal of the revealed religions, which has elevated the Islamic world to great heights. Islam accepts advancement in various life domains; in contrast, it encourages knowledge, learning, and invention, harnessing human capacities that have yielded many accomplishments and propelled Islamic civilisation to its pinnacle.

Furthermore, Islam calls on society to embrace inclusivity beyond its immediate environment and reject isolation and seclusion, as illustrated in the Quranic verse: "And We made you into nations and tribes so that you may know one another. Indeed, the most honoured of you in the sight of Allah is the most righteous of you. "[15]

- One of the most important functions the family performs for society is socialisation, which equips society with individuals attuned to its nature; committed to its principles, values, and goals; speaking its language; and adhering to its religion and ideology. The family educates the new generation in the society's language and religious and ideological principles, continually reminding them of their history and glorious heritage, and instilling the social and moral qualities that society embodies.[16]

- One of globalisation's primary objectives is to dismantle and fragment the social fabric, especially in Arab and specifically Islamic societies, by undermining the religious foundations that constitute essential pillars of social cohesion and individual life. This is achieved through the introduction of new norms inspired by Western perspectives and the imposition of a new ideology proliferated by the technologies of information and modern techniques, which have had a clearly discernible effect on the members of a single family.

Attempts to influence the family have centred on several axes, the most important of which are as follows:

1. The pattern of social relationships and family communication between spouses has changed, with the emergence of new relationships bearing globalised labels such as homosexuality and marriage without formal contracts, making these concepts socially acceptable. Additionally, women face the challenges and ideologies of globalisation aimed at erasing their moral, cultural, and historical privacy, replacing it with pornography and hedonism through the replication of Western perspectives marked by moral and ethical decay.

[13] Al-Farouq Zaki Younis, Social Work and Social Change, Arab Culture House for Printing, Cairo, 2nd edition, 1978, p. 342.

[14] Ahmed Zaki Badawi, Dictionary of Social Science Terms, Library of Lebanon, Beirut, 1977, pp. 322–323.

[15] Dr. Saleh Al-Quraishi, Previous Reference, p. 100.

[16] Davis, K., Human Society, New York, The Macmillan Press, 1967, p. 599.

2. The pattern of family culture has shifted, especially concerning the relationship between children and parents and the weakening of family communication due to media influx and the information revolution. The proliferation of satellite channel broadcasting programmes and films detached from the realities of our lives has contributed to this change. Furthermore, the internet and mobile phones have become inseparable components of daily life and luxuries that many now consider indispensable. Childhood is also targeted through various channels through which globalisation pursues its objectives, albeit covertly, under the guise of safeguarding children's rights.

II. Social Relationships and the Family

1. Social Relationships within the Family:

This refers to the relationships established between the roles of husband, wife, and children, as well as the nature of the communication that occurs among family members residing in the same household. This includes the relationship between the husband and wife and among the children themselves.[17] Significant transformations have occurred, profoundly impacting family structure, especially within urban Arab contexts. Families have shifted from extended and patriarchal forms to nuclear families characterised by economic considerations, freedom, and independence. Urbanisation, technological advancements, and the influence of globalisation on the Arab world have diversified familial social relationships. Globalisation has had a pronounced social impact, notably causing an increase in the variety of social relationships, especially between spouses. Whereas the relationship between husbands and wives was traditionally exclusive and based on the equitable relationship prescribed by God and the Qur'an, globalisation has introduced concepts that threaten cultural identity. Among these is so-called homosexuality, which is prohibited in Islam, along with the recognition of marriage without a formal contract. Numerous organisations now demand the recognition of homosexuality and noncontractual unions. The following sections address these relationships sequentially, explaining the significance of each and its impact on family structure in terms of moral and societal degradation.

- **Social relationships between the husband and wife**

In the past, the father headed the household, made decisions related to the home, and endeavoured to provide the family's necessities. The relationship of the wife with her husband was characterised by obedience and submission, whereas her role included child-rearing and care. However, industrialisation and urbanisation disrupted this traditional model, leading to changes such as the following:

1. Husbands assisting their wives with domestic tasks;

2. Women assuming responsibility during the husband's absence;

3. Conflicts between husband and wife.[18]

Through globalisation, families have been standardised to social patterns prevalent in Western families, which has led to the destruction and dissolution of the family by promoting defective values, such as the following:

[17] Ghaith Mohammed Atef, Dictionary of Sociology, Dar Al-Ma'arifa Al-Jami'iya, Alexandria, 1992, p. 437.

[18] Abdullah Ibn Ahmed Al-Alaf, Improving Communication Patterns in Family Relationships, Master's Thesis in Family Therapy, internet, alaf@homall.com.

- Freedom over the body, including sexual relations between males and females (heterosexuality), and the consequences of illegitimate pregnancies, along with laws permitting abortion, which is legal in most Western countries.[19]

- Deviants (Homosexuality): It is necessary to understand the concept of homosexuality, known in English as homosexuality. Homosexual orientation is defined as a strong, continuous psychological, emotional, and sensory attraction towards a person of the same sex. This orientation may culminate in a desire for physical union and subsequent sexual contact. Such orientations differ qualitatively from the conventional sexual relations associated with biological sex, social sex, and social roles.[20]

Homosexual orientation differs from other types of sexual behaviour in that it results from often ambiguous feelings intertwined with the individual's self-perception and their degree of acceptance of their orientation. A person is not necessarily homosexual simply because they engage in homosexual acts; it is important to distinguish between homosexual orientation and homosexual behaviour. Homosexual orientation refers to an individual's psychological, emotional, and sexual attraction to persons of the same sex. Many people naturally possess such orientations and feelings. Some studies indicate that approximately 4% of the world's population has homosexual orientations. Notably, many individuals with such orientations do not engage in homosexual sexual practices, whereas many who engage in such practices do not necessarily have a homosexual orientation.

Homosexuality is a form of sexual deviance that has existed since ancient times, but its origins are unknown. Multiple factors contribute to the prevalence of this phenomenon, the most important of which are economic, social, and psychological factors. Its occurrence is greater in poorer regions than in wealthier regions, mainly because many young men and women in impoverished areas are unable to marry early due to exorbitant costs, family demands concerning dowries, and the high expenses necessary for establishing a complete marriage. The social aspect broadly relates to strict gender segregation, which prevents youth from releasing much of their energy through innocent means. Homosexuality is more prevalent among males than females in our societies because of its masculine nature.

There are several methods to reduce this phenomenon, including permitting innocent coeducation between the sexes and providing sports, social, and cultural clubs that help young men and women channel their energy into beneficial activities.[21]

III. The Social Dimension of Globalisation and Family Cultural Patterns

A. Relationships between parents and children:

It is well known that the relationship between parents and children is eternal, as ancient as life itself, and is influenced by the environment in which individuals are raised. Consequently, prevailing values and individual and collective behaviours in this crucial relationship change according to evolving circumstances. Despite this, a famous Arab saying worthy of reflection remains: "Raise your children according to morals different from yours, for they are created for a time different from yours," attributed to Imam Ali (peace be upon him).

In their upbringing of children, parents rely on religious, devotional, and ethical means and methods derived from Islamic culture, which they seek to embody in family life. Among the most influential methods for shaping children's personalities is the method of imitating role models, which is considered one of the most important, most successful,

[19] Kamelia Hilmi, Previous Reference, internet.

[20] Homosexuality, Wikipedia, The Free Encyclopedia, internet, http://ar-wikipedia.org/wik/index.php.
[21] Wasfi Al-Samaraa'i, Homosexuality: Causes and Treatments, Al-Hiwar Al-Mutamadin, Issue 2637, 2009, internet.

and most effective in forming a child morally, psychologically, and socially. This is because the educator, whether parents or others, represents the ideal in the eyes of the child, who instinctively tends to imitate and emulate.[22]

Parents and children must understand their relationship, remember the bond of blood and kinship, the importance of awareness of rights and duties, and act with high moral and noble human sentiment to preserve, purify, develop, and elevate this relationship beyond degradation and disobedience. This is a fundamental matter that must be observed in our authentic Islamic societies. The problem arises from the stark contradiction between how the relationship between parents and children should be and the reality of this relationship. Reports of disobedience from children daily hurt us, and we suffer upon hearing of the harshness of some parents in raising their children.[23]

Notably, there have been clear developments in the relationship between children and parents due to the radical changes in Arab society, especially the discovery of oil, which has led to economic and social changes reflected in social life, including changes in family conditions. This has caused many problems that distress the family and affect its children.

1. **The Problem of Raising Children in the Context of Globalisation:**

   In the modern era, the functions of upbringing have changed due to the increasing flow of information, the clash of knowledge, the openness of human societies to one another, and changes in values and lifestyles. All of these factors have complicated the responsibility of upbringing, making it heavy and complex, particularly in terms of transmitting heritage from one generation to the next through various educational media in society. Among the functions of social upbringing are the processes of omission, renewal, and addition through their role in preparing individuals for life and work within the framework of globalisation and interaction with diverse social cultures. This requires flexibility, creativity, and innovation rather than rigidity, with children and youth becoming victims of cultural friction and social mobility. Some families inadvertently adopt inappropriate practices in guiding and raising their children to face new life circumstances, mistakenly believing these methods will aid the physical, psychological, and emotional growth of their children within modern society. These methods include overindulgence and excessive protection; neglect and lack of supervision and follow-up; lavish luxury; fascination with all that is new publicly; materialistic and superficial competition; absence of good role models; discrimination in treatment; harshness; and lack of safety and reassurance.[24]

Additionally, there is reluctance among youth to marry due to the prevalence of sexual immorality (pornography) and due to marriage and divorce laws that make marriage a trap for young people. All of these factors pose challenges to Arab cultural identity by spreading many material and moral phenomena unrelated to Arab culture and identity among much of the Arab populace.[25]

2. **Media Influx and the Information Revolution:**

[22] Ruqayya Khayyari, Islamic Culture and Family Upbringing: A Field Study in Biskra, Master's Thesis, Mohamed Khider University of Biskra, Published Online, http://ww.elganna.com.

[23] Abdullah Ibn Ahmed Al-Alaf, Improving Communication Patterns in Family Relationships, Master's Thesis in Family Therapy, internet, alaf@homall.com.

[24] Aziza Al-Tai, The Culture of the Child Between Identity and Globalisation, National Programme for Book Support/Oman Authority/Cultural Club in Muscat, 2011, p. 97.

[25] Mohammed Sael Nasrallah Al-Ziyoud, The Impact of Globalisation on Arab Culture, Faculty of Educational Sciences, University of Jordan, Amman, Jordan, internet.

The media holds great importance in daily life, as it plays a critical role in building a civilised society on the basis solely of scientific foundations. The media is connected to, and influenced by, the social systems to which it belongs. Its supreme importance is highlighted in its impact on the level of knowledge and social development and even on the continuity and sustainability of society. The media is not a temporary phenomenon but rather a generator that transmits opinions and beliefs from one generation to another and fosters relationships between them. Undoubtedly, the media can affect human awareness and behaviour at all life stages, shaping their viewpoints, convictions, and understanding of life. Here, the focus is on media content directed at children. This content has become one of the most dangerous media industries today, potentially constituting a full-blown war alongside Crusades and Zionist wars and their protocols.

This war employs the globalisation of sound and image through the spread of satellite dishes, multiple television channels, and the emergence of the internet. This rapid dissemination has brought new and more sophisticated methods to capture children, control their minds, and lead them to addiction. Most companies operating in this field are foreign firms that aim to instill Western culture and the concepts of entertainment, play, and leisure. These are deeply rooted in Western secular ethics, treating children's media as a market-driven enterprise focused on profit rather than values, thereby generating psychological and moral distortion in children. This distortion complicates correction, as these models and patterns become ingrained in the unconscious with age.[26]

IV. Field Study

Methodological Framework:

The study employed the social survey method via a sample approach, which typically involves examining a specific number of cases or units within the constraints of time, effort, and resources available to the researcher. The social survey method was followed in the following steps:

1. **Defining the Problem:**

   The research problem was defined by identifying the social dimension of globalisation and its effects on electronic upbringing within the family.

2. **Statistical Sample:**

   A sample is understood as a specific portion, both in quantity and type, representing several individuals presumed to possess the same characteristics present in the study population. The statistical sample in this research consisted of 25 units (families), which were randomly selected from the city of El Sharaf in Djelfa Province as follows: a random sample of 25 family units was drawn from the residential neighbourhood where the researchers reside (Al-Mala's neighbourhood in El Sharaf).

Accordingly, data collection relied on the following tools:

1. **Questionnaire:**

   A questionnaire is a tool comprising a set of questions or statements requiring respondents to answer according to a method specified by the researcher, depending on the research objectives.[27]

[26] Ahmed Abdul Karim Al-Rubaie, Muslim Child between Civilisational Heritage and the Danger of Contemporary Globalisation, Mosul, Iraq, Published Research on the internet, http://www.gulfkids/ar/index.php/action=show.

[27] Ahmed Salman Ouda, Fathi Hassan Malouki, Fundamentals of Scientific Research in Education and Human Sciences, Al-Manar Publishing and Distribution Library, Zarqa, Jordan, 1987, p. 150.

2. **Validity Testing of the Questionnaire:**

Validity refers to the questionnaire's ability to measure what it is intended to measure. Content validity was assessed by determining the relevance of the questionnaire items to the variable under study.[28] This was accomplished by presenting the questionnaire to a panel of experts to obtain their opinions. Following their evaluation, the agreement rate for the questionnaire items reached 91.07%, which was considered evidence of the questionnaire's face validity before field implementation. The panel consisted of four experts specialising in the subject matter.

3. **Interview:**

An interview is defined as a structured, personal interaction involving direct verbal communication between the interviewer and one or more respondents regarding a specific topic.[29] This implies that a social process takes place between two individuals: the researcher and the respondent. It involves a reciprocal exchange, where the researcher poses questions to the respondents following an explanation of these questions to elicit answers.

3. **Statistical Data Table:**

The process of tabulating the statistical data was conducted in systematic steps as follows:

A. Verification of the questionnaires:

This step involves examining all completed questionnaires to ensure that they have been fully answered.

B. Coding the Responses

This step requires converting the data obtained from the questionnaires into numerical codes. This transformation enables the classification and description of the data in statistical tables. The percentages are subsequently calculated via the percentage formula as follows:

$$\text{Percentage}=\text{Population}/\text{Sample}\times 100$$

C. Formation of Statistical Tables (Tabulation of Data):

This follows the coding process, whereby the data are organised into statistical tables for analysis.

Statistical methods used in the study:

After the respondents' answers were transferred into statistical tables, the researcher analysed the data via the statistical software SPSS. The following measures were employed:

1. **Percentage of frequency:**

[28] Black, James et al., Methods and Issues in Social Research, John Wiley and Sons, New York, 1976, p. 222.

[29] Omar Mohammed Al-Toumi, Scientific Research Methodologies, Dar Al-Thaqafa, Beirut, 1971, p. 299.

2. This measure was used to determine the extent to which the sample members agreed with the questionnaire items.

3. **Arithmetic Mean:**

4. This method is used to identify the degree of dispersion of the sample members' responses from the assumed mean.

5. **Standard Deviation:**

6. Helps ascertain the consistency of the sample members' responses.

Second: Presentation, Analysis of Data, and Results of the Study Population

Questionnaire Items

01- Personal Data

- Gender: Male/Female
- Age: 20–30/31–40/41–50/51–60
- Educational Level: No Education/Primary/Secondary/Higher Diabetes
- Number of Children: _____

02- Study Questions

Response Options:

Yes/Sometimes/To some extent

- Do you feel that your young children spend most of their time watching cartoons and animated shows?
- Do you, as parents, feel that your children are influenced by scenes in films that may provoke violence and rough behaviour in them?
- Does watching television programmes affect your children's academic achievement and lead to their failure?
- Does excessive use of mobile phones reduce their opportunities for social interaction within their family and social environment?
- Does the inappropriate use of mobile phones affect monthly family income?
- Does excessive use of the internet by children lead them to lose shame when speaking about obscene acts involving the opposite sex?
- Does excessive internet use prevent children from attending family social situations?

- Does excessive internet use contribute to the decline in children's moral values?
- Are your children's academic failure and tardiness at school caused by excessive internet use and prolonged sitting before it?

Descriptive Tables of Personal Data of the Sample

Table 1

Distribution of sample members by gender

Gender	Number	Percentage
Male	25	50%
Female	25	50%
Total	50	100%

Table 1 shows that males represent 50% of the sample members, whereas females represent 50% of the sample.

Table 2

Distribution of Sample Members by Gender within Each Age Group

Age	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
20–30	6	24%	5	20%	11	22%
31–40	6	24%	7	28%	13	26%
41–50	8	32%	11	44%	19	38%
51–60	5	20%	2	8%	7	14%
Total	25	100%	25	100%	50	100%

From Table 2, it is evident that the highest percentage of male respondents (32%) falls within the 41–50 age group, followed by equal percentages of 24% for both the 20–30 and 31–40 age groups. The lowest percentage of males (20%) was in the 51–60 year age group. The arithmetic mean age for male respondents is 40.4 years, with a standard deviation of 9.97.

For females, the most significant proportion (44%) was in the 41–50 age group, followed by 28% in the 31–40 age group, 20% in the 20–30 age group, and 8% in the 51–60 age group. The mean age for both male and female respondents combined is 40.79 years, with a standard deviation of 9.122.

Table 3

Educational Level of the Husband

Educational Level	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
Primary	0	0%	0	0%	0	0%
Secondary	8	32%	13	51%	21	42%
Higher Diploma	17	68%	12	49%	29	58%
Total	25	100%	25	100%	50	100%

According to the data in Table 3, 32% of the males had a secondary educational level, whereas 51% of the females had the same level. Moreover, 68% of the males held a higher diploma than 49% of the females did.

Table 4

Number of Children

Number of Children	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
1–2	15	60%	13	52%	28	56%
3–4	6	24%	10	40%	16	32%
5–6	4	16%	2	8%	6	12%
Total	25	100%	25	100%	50	100%

Table 4 shows that 60% of males have one or two children, whereas 52% of females have the same number of children. For those with three or four children, males constitute 24%, whereas females constitute 40%. Among families with five or six children, males represented 16%, and females represented 8%. Overall, 56% of the sample (both males and females) had one or two children, 32% had three or four children, and 12% had five or six children.

Descriptive Tables of the Respondents' Answers from the Sample Families

Table 5

Do you feel that your young children spend most of their time watching cartoons and animated shows?

Response	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
Yes	14	68%	17	56%	31	62%
Sometimes	10	28%	10	40%	20	34%
No	1	4%	1	4%	2	4%
Total	25	100%	25	100%	50	100%

Table 5 shows that 62% of the respondents affirmed that their young children spend most of their time watching cartoons, with the percentage of females answering "yes" higher than that of males. This may be due to the prevalence of numerous satellite channels showing various cartoon films. At times, parents leave young children in front of television for extended hours to attend to their chores, especially when the mother is employed and aims to complete household tasks quickly.

Table 6

Do you, as parents, feel that your children are influenced by scenes in action movies that may incite violence and aggressiveness?

Response	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
Yes	13	52%	17	68%	30	60%
Sometimes	10	40%	5	20%	15	30%
No	2	8%	3	12%	5	10%
Total	25	100%	25	100%	50	100%

As shown in Table 6, 60% of the respondents indicated “yes” that their children are influenced by scenes in action movies that may provoke violence and harsh behaviour. The percentage of females who answered “yes” was greater than that of males. Many children, especially those who watch violent cartoons, tend to imitate aggressive and violent behaviours, sometimes even towards younger siblings or their mothers.

Table 7

Does Watching Television Programmes Affect Your Children’s Academic Achievement and Lead to Their Failure?

Response	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
Yes	16	64%	17	68%	33	66%
Sometimes	4	16%	5	20%	9	18%
No	5	20%	3	12%	8	16%
Total	25	100%	25	100%	50	100%

Table 7 shows that 66% of the respondents affirmed that their children’s watching of television programmes negatively affects their academic performance, leading to failure. The percentage of females who agreed with "yes" was slightly greater than that of males. It is understood that children’s preoccupation with satellite programmes, entertainment, films, and series distracts them from studies and results in academic failure.

Table 8

Does Frequent Mobile Phone Use Reduce the Opportunities for Social Interaction within the Family Environment?

Response	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
Yes	15	60%	15	60%	30	60%
Sometimes	6	24%	7	28%	13	26%
No	4	16%	3	12%	7	14%
Total	25	100%	25	100%	50	100%

According to Table 8, 60% of the sample respondents indicated that excessive mobile phone use by their children reduces their opportunities for social interaction within the family environment. Both males and females responded "yes" equally to this. Parents reported that their children are frequently preoccupied with mobile phones, downloading new apps, songs, and messages, and using the internet on their phones. This is a negative indicator of their lack of engagement with their family social environment, as parents often complain about their children's absence at family gatherings and lack familial communication.

Table 9

Does Improper Use of Mobile Phones Affect Monthly Income?

Response	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
Yes	15	60%	13	52%	28	56%
Sometimes	7	28%	12	48%	19	38%
No	3	12%	0	0%	3	6%
Total	25	100%	25	100%	50	100%

Table 9 indicates that 56% of the respondents affirmed that improper use of mobile phones affects the family's monthly income. The percentage of males that answered "yes" was greater than that of females. This is attributed to the large number of prepaid cards consumed monthly by children, which can strain the family budget, especially in families with many children.

Table 10

Does Excessive Use of the internet by Children Lack Shyness when Discussing Obscene Acts with the Opposite Sex?

Response	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
Yes	13	52%	9	36%	22	44%
Sometimes	4	16%	10	40%	14	28%
No	8	32%	6	24%	14	28%

Total	25	100%	25	100%	50	100%

From Table 10, 44% of the respondents confirmed that excessive internet use by their children leads to a lack of shyness when discussing obscene acts with the opposite sex. The percentage of males that responded "yes" was greater than that of females. This may be attributed to children spending extended periods on the internet and being exposed to images and songs stimulating desires, which sometimes cause them to lose shyness in interactions with the opposite sex. Parents currently face this challenge, as internet use has become necessary and important for managing work, especially if the father owns a company or property. Therefore, parents need to monitor their children's online activities and the websites they visit to protect them from exposure to ideas and morals that are inconsistent with the realities and values of their society.

Table 11

Does Excessive internet Use by Children Prevent Them from Attending Family Social Events (e.g., Holidays, Visiting the Sick, Attending Funerals)?

Response	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
Yes	13	52%	12	48%	25	50%
Sometimes	6	24%	8	32%	14	28%
No	6	24%	5	20%	11	22%
Total	25	100%	25	100%	50	100%

Table 11 shows that 50% of the respondents confirmed that excessive internet use prevents their children from attending family social events. The percentage of males that answered "yes" was slightly greater than that of females. Children often remain engaged in prolonged internet use, which limits their participation in family gatherings. Parents themselves typically organise these events, and failing to encourage attendance is a significant error, as family communication is vital for maintaining and strengthening social family relationships.

Table 12

Does Excessive internet Use by Children Lead to a Decline in Their Moral Values?

Response	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
Yes	13	52%	11	44%	24	48%
Sometimes	3	12%	7	28%	10	20%
No	9	36%	7	28%	16	32%
Total	25	100%	25	100%	50	100%

Table 12 indicates that 48% of the respondents believe that excessive internet use leads to the deterioration of their children's moral values, rendering them materialistic. The percentage of males that answered "yes" was greater than that of females. This reflects parents' concerns regarding the decline in their children's moral standards, as children increasingly prioritise financial gains even at the expense of values and ethics.

Table 13

Does Excessive internet Use and Prolonged Screen Time Lead to Academic Failure and Tardiness?

Response	Male Frequency	Male %	Female Frequency	Female %	Total Frequency	Total %
Yes	19	76%	14	56%	33	66%
Sometimes	3	12%	8	32%	11	22%
No	3	12%	3	12%	6	12%
Total	25	100%	25	100%	50	100%

According to Table 13, 66% of the respondents reported that excessive internet use and prolonged screen time cause their children to fail academically and arrive late in school. The percentage of males that answered "yes" was greater than that of females. Parents report their struggle with children arriving late in school or failing exams despite having a conducive study environment at home and tutoring in several subjects. They attributed much of the problem to excessive internet use, including platforms such as Facebook, chat rooms, and YouTube.

Answers to the Questions

- What are the social risks of the uncontrolled consumption of globalisation within the Algerian family?
- How can the concept of electronic upbringing be adopted within the family's role in the socialisation of the child?
- To what extent is the child's culture affected in light of the original cultural constants of the Algerian family?

The field study results indicate that 13 (52%) males and 12 (48%) females answered "yes" to the question of whether their children are constantly engaged with the internet for long hours, preventing them from attending family social events. Notably, parents themselves often host these gatherings; neglecting this responsibility is a significant fault because family communication is vital for maintaining and strengthening social family relationships. Overall, 50% of the total sample affirmed this, whereas 22% from both genders responded "No."

The findings reflect the cultural and educational impact on children due to the weakening of social upbringing, which stems from the following:

- The family abandoned its educational and awareness role.
- Uncontrolled and unregulated consumption of globalisation tools.
- Marketing of globalisation media and making it accessible to all members of society.

- Social problems erode family and community cohesion.

Among the key challenges of globalisation is the capacity to reform and preserve the family unit. The family is the most minor social component in society and plays a vital role in maintaining national identity. It is the fundamental building block of society, influencing its course and shaping its identity significantly. In the Arab world, beyond the family's importance and role, it possesses significant capacities to confront globalisation challenges. By preserving family cohesion and stability and strengthening ties among family members and with other families through kinship, marriage, and neighbourhood bonds aligned with Islamic teachings on spousal ties, affection, kinship maintenance, good neighbourliness, and others, this collectively reflects family cohesion and safeguards the national identity of Arab citizens, especially as Arab families still maintain their distinctive features.

The role of the state in social development involves prioritising education, health, and nutrition and providing basic individual needs, which are essential social considerations in any society.

Social instability in traditional relationships leads to social disorder. Weakening the family's role in social upbringing, along with the distraction of its members by foreign satellite channels, reduces attention to reality and causes escape from it instead of confronting it.

Recommendations and Proposals

Awareness programs should be broadcast through visual media to educate members of society, especially families, about the dangers of globalisation, which has infiltrated society with its enticing slogans but is essentially a plague attempting to influence human thought, particularly in the Third World, through a survival-of-the-fittest policy. Therefore, social guidance programs that increase societal awareness of how to beneficially utilise modern technological tools (such as the internet, mobile phones, and satellite broadcasts) are recommended. These programmes should focus on maximising the positive aspects that benefit our society while avoiding all harmful effects on children's values and morals.

Acknowledgments

The authors extend their gratitude to Blida University and Laghouat University for their institutional support and academic guidance in developing this study. Appreciation is also due to colleagues and students whose discussions and contributions provided valuable insights into the intersections of globalisation, education, and family dynamics.

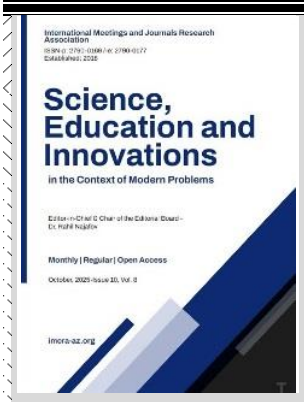
Conflict of Interest Statement

The authors declare no competing financial interests or personal relationships that could have influenced the research, analysis, or conclusions presented in this paper.

References

1. Wikipedia contributors. (n.d.). Globalisation from an Islamic perspective. In Wikipedia. Retrieved from https://en.wikipedia.org
2. Ouda, A. S., & Malouki, F. H. (1987). Fundamentals of scientific research in education and human sciences. Zarqa, Jordan: Al-Manar Publishing and Distribution Library.
3. Al-Tai, A. (2011). The culture of the child between identity and globalisation. Muscat: National Programme for Book Support, Oman Authority, Cultural Club.
4. Al-Quraishi, S. (n.d.). [Details missing—cited as previous reference].
5. Hilmi, K. (n.d.). Social globalisation. Islamic World Committee for Women and Children. Retrieved from http://www.iicwc.org
6. Atef, G. M. (1992). Dictionary of sociology. Alexandria: Dar Al-Ma'arifa Al-Jami'iya.

7. Al-Samaraa'i, W. (2009). Homosexuality: Causes and treatments. Al-Hiwar Al-Mutamadin, (2637). Retrieved from http://www.ahewar.org
8. Khayyari, R. (n.d.). Islamic culture and family upbringing: A field study in Biskra (Master's thesis, Mohamed Khider University of Biskra). Retrieved from http://www.elganna.com
9. Al-Alaf, A. I. A. (n.d.). Improving communication patterns in family relationships (Master's thesis in Family Therapy). Retrieved from alaf@homall.com
10. Al-Ziyoud, M. S. N. (n.d.). The impact of globalisation on Arab culture. Amman: University of Jordan, Faculty of Educational Sciences.
11. Al-Ghurairi, B. A. (2001). Globalisation: A method of imperialist domination. International Studies Journal, 13, 1–5. Baghdad: International Studies Centre.
12. Al-Rubaie, A. A. K. (n.d.). Muslim child between civilisational heritage and the danger of contemporary globalisation. Mosul: [Research published online]. Retrieved from http://www.gulfkids/ar/index.php/action=show
13. Hilmi, K. (n.d.). [Details missing—cited as previous reference].
14. Al-Alaf, A. I. A. (n.d.). [Details missing—cited as previous reference]. Retrieved from alaf@homall.com
15. Hassan, B. A. U. (2003). Globalisation between Islamic and Western perspectives. London: Institute of Arab and Islamic Studies.
16. Al-Hadithi, M. A. H. (2007). Globalisation and the change of social values (Master's thesis). University of Baghdad, Faculty of Arts.
17. Abu Zaid, J. (n.d.). Youth and the Millennium Development Goals in the Arab world (Preliminary working paper). Workshop in Sana'a. Retrieved from [online source].
18. Al-Quraishi, S. (n.d.). [Details missing—cited as previous reference].
19. Al-Quraishi, S. (2011). Globalisation and its relation to the global economic movement and Islam's approach to addressing its issues. Contemporary Islamic Studies, 2(3), 100–110. University of Karbala.
20. Al-Toumi, O. M. (1971). Scientific research methodologies. Beirut: Dar Al-Thaqafa.
21. Wikipedia contributors. (n.d.). Homosexuality. In Wikipedia. Retrieved from http://ar-wikipedia.org/wik/index.php
22. Martin, P., & Schumann, H. (2001). The global trap (A. A. Ali, Trans.). Kuwait: Alam Al-Ma'rifa Series.
23. The Holy Quran. (n.d.). Surat Al-Insan, verse 28.
24. Mansour, A. M. S. (1978). The role of the family as a tool for social control in Arab society. Cairo: Arab Centre for Foreign Studies and Sports Training.
25. Younis, A. Z. (1978). Social work and social change (2nd ed.). Cairo: Arab Culture House for Printing.
26. Badawi, A. Z. (1977). Dictionary of social science terms. Beirut: Library of Lebanon.
27. Al-Afaf, A. I. (n.d.). [Email reference noted: alaf@homall.com].
28. Al-Jawad, K. M. (2005). Islam and the challenges of globalisation. Al-Naba Magazine, 75, 40–45.
29. Black, J., Champion, D., & Hall, J. (1976). Methods and issues in social research. New York: John Wiley & Sons.
30. Davis, K. (1967). Human society. New York: Macmillan Press.



Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Algerian Legislation and the Self-Employed Entrepreneur: A Struggle between Incentives and Challenges

Benziane Saada
Research Scholar
Faculty of Law and Political Science
University of Mascara
Algeria
Email: saada.benziane@univ-mascara.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Self-Employed Entrepreneur; Algerian Legislation; Informal Economy; Youth Employment; Economic Development

Abstract
This study examines the self-employed entrepreneur law in Algeria as a modern legal mechanism designed to formalise informal economic activities, particularly within the digital sector, and to empower youth to participate in the labour market. It explores the legal definition and distinctive features of the self-employed entrepreneur, the procedural requirements for acquiring this status, and the associated rights and obligations. The study also analyses the incentives provided by the law to encourage entrepreneurship alongside the significant challenges faced by self-employed individuals, especially in financing, management, and human development. Finally, the manuscript offers practical recommendations aimed at enhancing the regulatory framework and support systems to promote the sustainable growth of self-employment as a vital component of Algeria's economic development.

Citation. Benziane S. (2025). Algerian Legislation and the Self-Employed Entrepreneur: A Struggle between Incentives and Challenges. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 829–839. https://doi.org/10.56352/sei/8.11.64

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 21.01.2025 | Accepted: 08.08.2025 | Published: 09.09.2025 (available online)

Introduction

Unemployment is regarded as a spectre that successive governments in Algeria have sought to alleviate by reducing its impact and searching for solutions through the implementation of a set of measures aimed at training and integrating young people into the labour market, as well as fostering self-initiative within enterprises to support the principle of competitiveness among them. The challenges associated with this phenomenon have been further compounded by the presence of economic activities operating in the informal sector, conducted outside official frameworks that the state has attempted to regulate and codify to incorporate them into the structured economy.

Algeria has encouraged young people to engage in these activities by granting them a set of financial, fiscal, and social advantages, along with other incentives, through the promulgation of the Basic Law on the Self-Employed Entrepreneur (Law No. 23--22 of 18 December 2022), which seeks to strengthen the entrepreneurial spirit among youth and integrate them into the formal economy.[1]

Given the importance of this topic, owing to the novelty of the law and its provisions, it represents a new model in the field of entrepreneurship, framed within the concepts of self-employment and encouraging youth participation. The legal issue raised by this study revolves around the definition of the self-employed entrepreneur and the principal challenges he or she faces in carrying out economic activities.

The study adopts a descriptive-analytical method, examining the relevant dimensions and clarifying specific gaps surrounding the subject. The research is structured into two sections: the first addresses the concept of the self-employed entrepreneur, providing its definition and identifying the associated obligations; the second addresses the advantages granted to the self-employed entrepreneur, as well as the main challenges and constraints encountered in the pursuit of these activities.

At present, all states, including Algeria, are competing to mobilise diverse human capacities and social groups to contribute to advancing economic growth through training, development, and the integration of individuals into entrepreneurship to generate additional wealth to help revitalise the economy. Efforts have therefore been directed towards encouraging microenterprises, start-ups, and small, creative, and innovative businesses, within which the category of the self-employed entrepreneur has emerged as a solution both to eliminate the spectre of unemployment and to invest in human capital.

Accordingly, we attempt to define the term *self-employed entrepreneur*, distinguish it from related concepts, and then address the procedures for acquiring this status along with its privileges and obligations.

I. The Concept of the Self-Employed Entrepreneur and Its Distinction from Other Related Terminologies

The concept of the self-employed entrepreneur may vary depending on the perspective adopted, whether legal, economic, or social. However, its meaning becomes clearer when contrasted with institutions that bear close resemblance to it. Thus, this section will be examined in two paragraphs: the first will present a definition of the self-employed entrepreneur. In contrast, the second highlights the distinction between self-employment as an entrepreneurial model and other similar terminologies.

1. Concept of the Self-Employed Entrepreneur

At present, all nations, including Algeria, are striving to incorporate diverse human capacities and social groups into driving economic growth through training, development, and the integration of individuals into entrepreneurship. The objective is to generate additional wealth to help revitalise the economy. Thus, efforts have been made to encourage microenterprises, start-ups, and tiny, creative, and innovative businesses, within which the category of the self-employed entrepreneur has emerged as one of the solutions for eliminating the spectre of unemployment and investing in human capital.

Therefore, it is essential to define the term *self-employed entrepreneur* and distinguish it from similar concepts before proceeding to the procedures for acquiring this status and the associated privileges and obligations.

A. Defining the Self-Employed Entrepreneur

[1] Law No. 22-23 of 24 Jumada al-Awwal 1444, corresponding to 18 December 2022, containing the Basic Law on the Self-Employed Entrepreneur, Official Journal No. 85 of 19 December 2022, p. 4.

In outlining the meaning of the self-employed entrepreneur, the legislature relied on a set of criteria, which simultaneously serve as the conditions for acquiring this status. These include the personal criterion, the residence criterion, the financial criterion, and the criterion of the nature of the activity.

The personal criterion associates the concept of the self-employed entrepreneur with every natural person. It appears that the legislator, on the basis of *realist theory*, recognises the legal personality of the natural person alone. The legislator invested in the individual's intellectual and cognitive faculties as the basis for technological and digital creation and innovation, thereby excluding any legal person, regardless of the nature, activity, or type, be it institutions, companies, or bodies.

Furthermore, the individual must have reached the statutory minimum age for employment under Algerian law, which is set at sixteen (16) full calendar years and above. Exceptions apply solely in apprenticeship contracts drafted in accordance with the labour legislation and regulations in force. The individual must also have full mental capacity. This requirement marks a departure from the general principle in Algerian law that determines the age of majority at nineteen (19) years. The minimum legal working age constitutes a matter of public order that must not be violated; otherwise, offenders are subject to criminal liability and the statutory penalties of imprisonment and fines.

Notably, the statutory age established under Algerian law is consistent with International Labour Organisation Convention No. 138 of 1973, which stipulates that the minimum age for employment must not be less than fifteen (15) years. Algeria ratified this convention on 30 April 1984.[2]

According to the economic and financial criterion, the self-employed entrepreneur must carry out work or activities individually, that is, in their own name and for their own account, independently, without having a dependency relationship with another person or being subject to supervision and direction in the management, administration, or practice of the activity by a particular entity or individual.[3]

This activity must generate a financial profit and cannot be merely the provision of free services. However, engaging in this activity does not grant the status of a trader, as the law does not require registration with the Commercial Registry Directorate, provided that the entrepreneur respects and does not exceed the annual turnover threshold, which, according to the 2023 Finance Law, is set at five million Algerian dinars. Some members of the National People's Assembly criticised this amount during parliamentary discussions on the draft law, arguing that it does not sufficiently encourage young entrepreneurs to engage in information technology and related fields, given that the revenues and profits generated in these sectors often exceed the annual turnover limit by several multiples.[4]

Notably, the law relies on the criterion of the nature of the activity by limiting the self-employed entrepreneur's practice to a legally defined and codified list of specific fields to avoid overlaps with other professions, liberal professions, and crafts. These activities include consulting, expertise, training, digital services and related activities; domestic services; personal services; entertainment and leisure services; services directed at institutions; and cultural, communication, and audiovisual services. The law explicitly excludes, by way of absolute prohibition, all regulated activities that require obtaining an administrative licence or accreditation.

This approach contrasts with Moroccan Law No. 13.114, which, in its first article, defines the self-employed entrepreneur as any natural or legal person engaged individually in any activity, whether industrial, commercial, or artisanal, without specifying the nature of the person. The list of these activities is left to be determined by regulatory texts, provided that the annual turnover does not exceed 500,000 dirhams for commercial activities or 200,000 dirhams for services.

[2] Mahdi Bakhda, "La protection juridique du travailleur mineur dans la législation algérienne," *Revue de droit*, Institut des sciences juridiques et administratives, Centre Universitaire de Relizane, vol. 3, no. 1 (10 December 2014), p. 46.

[3] Lobna Hamani, "Le régime de l'entrepreneur autonome entre loi et réalité: Une réponse aux objectifs fixés," *Revue des conflits d'affaires*, no. 22 (2017), p. 36.

[4] Bouazza Nadira, "On the Introduction of the Self-Employed Entrepreneur Status in Algerian Law," *Journal of Academic Studies*, vol. 11, no. 1 (2024), p. 568.

Economic, Social and Environmental Council of Morocco, *Self-Employment*, Cana Print Publishing House, 2016, p. 1919. Notably, the law relies on the criterion of the nature of the activity by limiting the self-employed entrepreneur's practice to a legally defined and codified list of specific fields to avoid overlaps with other professions, liberal professions, and crafts. These activities include consulting, expertise, training, digital services and related activities; domestic services; personal services; entertainment and leisure services; services directed at institutions; and cultural, communication, and audiovisual services. The law explicitly excludes, by way of absolute prohibition, all regulated activities that require obtaining an administrative licence or accreditation.

This approach contrasts with Moroccan Law No. 13.114, which, in its first article, defines the self-employed entrepreneur as any natural or legal person engaged individually in any activity, whether industrial, commercial, or artisanal, without specifying the nature of the person. The list of these activities is left to be determined by regulatory texts, provided that the annual turnover does not exceed 500000 dirhams for commercial activities or 200000 dirhams for services.[5]

2. Distinguishing the Self-Employed Entrepreneur from Other Similar Terms

Like many other countries, Algeria has sought to adopt an entrepreneurial approach to advance its developmental economy. This approach has been used to establish the legal and regulatory frameworks governing the entrepreneurial sector by promoting and developing small enterprises.[6] start-ups,[7] and self-employed entrepreneurship.[8]

Each of these types of enterprises is characterised by an independent legal system due to the differences between them in several respects, as follows:

- Small enterprises and start-ups are considered legal entities that take the form of commercial companies operating in the production sector of goods and services. They have an organised structural framework and employ a significant number of workers. For example, tiny enterprises employ no more than nine (9) workers; small enterprises employ up to forty-nine (49) workers; and start-ups do not exceed two hundred and fifty (250) workers.[9] Unlike the self-employed entrepreneur, who is a natural person engaging in economic activities individually and independently, working in their own name and for their own account, and who is legally prohibited from employing workers to fulfil their operational obligations,

- Algerian law requires that self-employed entrepreneurs' annual turnover not exceed five million Algerian dinars. In contrast, small enterprises are legally required not to exceed an annual turnover of four hundred million Algerian dinars, and tiny enterprises must not exceed two hundred million Algerian dinars. Start-ups, however, must meet the annual turnover amount determined by the National Committee for granting the start-up enterprise label.[10]

- Since both small enterprises and start-ups take the form of commercial companies, the Algerian legislature has required them to register in the Commercial Register. As the self-employed entrepreneur is not considered a

[5] Economic, Social and Environmental Council of Morocco, *Self-Employment*, Cana Print Publishing House, 2016, p. 1919.

[6] Law No. 17-02 of 10 January 2017, containing the guiding framework for the development of small and medium enterprises, Official Journal (OJ), No. 02, 11 January 2017.
[7] Executive Decree No. 20-254 of 15 September 2020 establishing a national committee to grant the status of start-up enterprise and innovative project and business incubator, defining its tasks and organisational procedures, Official Journal (OJ), No. 55, 21 September 2020.
[8] Law No. 22-23 containing the Basic Law on the Self-Employed Entrepreneur, cited above. Would you like me to continue translating the next section or any specific part of the manuscript?
[9] Zaitouni El Howaria, *Entrepreneurship Studies*, Faculty of Economic and Commercial Sciences, Department of Economic Sciences, University of Tebessa, academic year 2021/2022, p. 124. Also see Sa'idiyya Warda, *Qualification and Development of the Competitiveness of Small and Medium Enterprises as a Strategic Choice to Support Economic Diversification in Algeria: An Analytical Study*, doctoral thesis, Faculty of Economic and Commercial Sciences and Management Sciences, Department of Economic Sciences, University of Guelma, 2023/2024, pp. 29-30.
[10] Rajae Oumaddoud, "The Legal Framework of Start-ups in Algeria," *Message Journal for Studies and Human Research*, vol. 9, no. 2 (2024), p. 458.

trader, the legislator exempts them from this registration if their annual turnover remains within the limit of five million Algerian dinars. However, suppose that this threshold is exceeded for three consecutive years of activity. In that case, the self-employed entrepreneur is required to register in the commercial register if they wish to continue their business.[11]

- The self-employed entrepreneur carries out economic activities limited to a legally specified list, such as personal services, digital services, consultancy, expertise, training, and others, explicitly excluding regulated activities and liberal professions.

In contrast, the activities undertaken by small enterprises and start-ups are considerably broader, encompassing all goods and services production activities, provided they do not contravene the law or public order.[12]

- The self-employed entrepreneur primarily relies on self-financing and sometimes resorts to small loans, unlike small enterprises, which often seek financial and banking funding.[13] Start-ups frequently attract specific investors, particularly venture capitalists and businesspeople who target innovation and creativity, providing the necessary financial resources for expansion and growth.[14]

- Start-ups originate from ideas of innovation and growth, typically producing new, creative products in the field of information and communication technologies and rapidly developing them to meet the evolving and changing tastes of consumers. This makes start-ups more capable of marketing their products both nationally and internationally. Small enterprises, on the other hand, are economic entities focused on producing goods and/or services. They generally do not prioritise innovation and creativity; instead, they primarily seek to provide the quantity and quality demanded by customers and to respond to this demand, which necessitates expanding the marketing of their products. The self-employed entrepreneur differs in that they do not strive to innovate or develop new products, even though they may possess such capabilities. Instead, they aim to carry out their activities thoroughly and provide the required services consistent with their limited financial resources.[15]

- Algerian law prohibits the seizure of the premises where the self-employed entrepreneur operates owing to unpaid debts or risks arising from their activities.[16] In contrast, small enterprises and start-ups, being commercial companies, can have their assets seized and auctioned to satisfy debts in the event of payment default.

II. Procedures for Acquiring the Status of Self-Employed Entrepreneurs and Obligations

To acquire the status of self-employed entrepreneur and benefit from all the rights and privileges covered by the legal and regulatory frameworks governing this entrepreneurial activity, an individual must undergo a set of mandatory administrative procedures before the authority is responsible for managing and organising self-employed entrepreneur files and must fulfil several legal obligations depending on the circumstances.

1. Procedures for Acquiring the Status of a Self-Employed Entrepreneur

[11] Article 13 of Law No. 22-23 containing the Basic Law on the Self-Employed Entrepreneur, cited above.

[12] Safia Bouzar, *Entrepreneurship Studies*, Faculty of Economic, Commercial, and Management Sciences, University of Algiers 03, academic year 2018/2019, pp. 69–70.
[13] Aisha Zerouak, "Start-ups' Inclination in Algerian Law: The Economic System Support and Development Fund for Start-ups as a Model," *Algerian Journal of Law and Political Science*, vol. 7, no. 1 (2022), p. 974.
[14] Youssef Hussein and Ismail Sadiqi, "A Field Study on the Reality of Start-up Creation in Algeria," *University of Bechar Annals in Economic Sciences*, vol. 8, no. 1 (2021), p. 74.
[15] Ahmed Lamine Menagli, "The Basic Law of the Self-Employed Entrepreneur: A New Legal Framework," *Journal of Legal and Political Thought*, vol. 7, no. 1 (2023), p. 1134.
[16] Article 8 of Law 22-23, Basic Law on the Self-Employed Entrepreneur, cited above.

To avoid the bureaucratic obstacles that generally burden investors in public administrations, Algeria is currently working to alleviate or eliminate administrative procedures. To encourage individuals to acquire the status of self-employed entrepreneurs, the registration process in the National Register of Self-Employed Entrepreneurs, meeting the legal conditions stipulated in Article 3 of Law No. 22--23, as previously discussed, has been facilitated. This process comprises three stages:

In the first stage, the applicant submits a registration request to the National Agency for the Self-Employed Entrepreneur, a public institution with an administrative character, legal personality, and financial independence. This agency is responsible for establishing, maintaining, and updating the National Register; managing the electronic registration portal; receiving, assessing, registering, deleting, and reregistering applications; supporting and monitoring the activities of self-employed entrepreneurs; and updating and enhancing the list of activities that qualify for benefits under the laws and regulations related to self-employed entrepreneurship.

The second stage involves examining the registration request and verifying the application documents within a period of three (3) days from the date of submission.

The third stage, following the agency's appraisal of the application, involves notifying the applicant of acceptance or rejection via the digital platform. If accepted, the applicant is registered in the National Register, thereby acquiring the status of self-employed entrepreneur and receiving a card evidencing this status with a unique national registration number. In the event of rejection, the applicant may appeal to the minister responsible for start-up enterprises, who must respond within thirty (30) days.[17]

Notably, pursuant to Articles 22, 23, and 24 of Executive Decree No. 23--197, the National Agency for the Self-Employed Entrepreneur may remove a self-employed entrepreneur from the National Register of Self-Employed Entrepreneurs and revoke their entrepreneur status card in the following cases:

- A personal request for removal is submitted by the self-employed entrepreneur to the agency or sent via the electronic portal.
- If the annual turnover exceeds the legally prescribed amount of five million Algerian dinars for three consecutive years.
- Reasons for or impediments prevent self-employed entrepreneurs from practising their activities.
- In the event of the self-employed entrepreneur's death.

In any of these cases, the agency issues a reasoned deletion decision, which is personally communicated to the entrepreneur and to all entities benefiting from the privileges associated with the entrepreneur card, which is automatically cancelled, particularly the tax authorities, postal services, social security bodies for nonsalaried workers, and banking institutions within fifteen (15) days. The removed entrepreneur may file an appeal with the minister responsible for start-up enterprises, who has the authority to respond to the appeal within thirty (30) days, whether concerning the refusal of registration or removal.[18]

[17] Articles 15 to 22 of Executive Decree 197-2023 dated 25 May 2023, which defines the list of activities eligible for benefits under the Basic Law on the Self-Employed Entrepreneur and the procedures for registration in the National Register of Self-Employed Entrepreneurs, Official Journal No. 37, issued 4 June 2023.

[18] It is worth noting that although the legislator did not explicitly mention the possibility of judicial appeal against decisions to refuse registration or remove an entrepreneur, it is considered permissible for the self-employed entrepreneur to file an administrative lawsuit seeking annulment of these decisions due to their administrative nature. These decisions are issued by administrative bodies (the National Agency for the Self-Employed Entrepreneur is a public institution of an administrative nature, and the Minister responsible for start-ups is also a central administrative authority) before the administrative courts.

1. Legal Obligations to be Respected

The self-employed entrepreneur is bound by a set of obligations that help organise their activities and ensure compliance with the laws and regulations in force in Algeria. These obligations include the following:

A. Filing Tax Declarations and Paying Due Taxes

The self-employed entrepreneur, as a taxpayer, is required to submit a declaration of existence to the competent regional tax inspection office within thirty (30) days from the commencement of their activity. Failure to submit the declaration within the specified period results in the imposition of a very minor fine intended solely as a deterrent.

The tax identification number obtained following the declaration plays a crucial role in indicating the legal status of the self-employed entrepreneur's activity, confirming whether it is officially registered with the tax authority. This obligation is supposed to assist the self-employed entrepreneur in invoicing for services provided to companies and institutions, thereby enhancing business credibility, expanding the scope of activity, and generating a good income. However, the law does not explicitly impose this obligation as mandatory.[19]

However, the law does not specify a standard invoice format that the self-employed entrepreneur must issue, whether it is a regular invoice or one with particular characteristics to be observed.

According to Articles 182, 183, 194, and 365, the self-employed entrepreneur is required to submit without delay a series of tax declarations to the tax authorities, particularly the declaration of existence, the estimated annual turnover declaration, and the final declaration of the actual annual turnover. These declarations must be submitted via specific forms available on the General Directorate of Taxes website. Failure to submit these declarations within the legal deadlines results in fines ranging between 10% and 20% if the delay exceeds a whole month. Additionally, the entrepreneur is obliged to pay the due taxes related to the annual single lump-sum tax, with the option to pay in whole or in instalments depending on their financial situation.[20]

B. Not Exceeding the Legally Prescribed Annual Turnover Threshold

Suppose the self-employed entrepreneur's annual turnover exceeds the amount of five million Algerian dinars (5 million DZD), as outlined in Law No. 22--24 dated 25 December 2023, which contains the Finance Law for 2023, for three consecutive years. In that case, the entrepreneur must register with the commercial register if they wish to continue their activity. However, if the turnover remains below the prescribed amount, the entrepreneur is exempt from mandatory registration in the Commercial Register, thus facilitating the lawful and organised exercise of their activity.[21]

C. Maintaining a Simple Accounting Record

The self-employed entrepreneur must keep a simple accounting ledger to record the financial and accounting transactions related to the exercise of their activity. This ledger must include entries of both income and expenses related to their work. The ledger must be numbered and stamped by competent tax authorities and must be free from any erasures or defacement.

Section Two: Incentives Granted to the Self-Employed Entrepreneur and the Challenges They Face

[19] Fatiha Ben Azzouz, "The Self-Employed Entrepreneur System and Its Privileges in Light of the Provisions of Law 22-23," *Journal of Legal and Social Sciences*, vol. 8, no. 3 (2023), p. 1081.

[20] General Directorate of Taxes, Single Lump-Sum Tax System, issued 24 October 2024, accessed 1 June 2024, www.Mfdgi.

[21] Bouazza Nadira, cited above, p. 571.

To encourage self-employment and facilitate the exercise of economic activities, self-employed entrepreneurs are granted a set of incentives designed to foster initiative and innovation in their field. These privileges act as motivations to support entrepreneurship and enable young people to enter the labour market in an official and organised manner.

However, despite these incentives, self-employed entrepreneurs face several challenges that hinder the continuity of their work, which will be analysed in the following two subsections.

First – Incentives Granted to the Self-Employed Entrepreneur

According to Law No. 22-23 dated 18 December 2022, the self-employed entrepreneur enjoys several privileges aimed at encouraging self-employment and facilitating economic activities, including the following:

- The self-employed entrepreneur is exempt from compulsory registration in the Commercial Register, which simplifies the initiation of activity without complex bureaucratic procedures.

- The self-employed entrepreneur is subject to the single lump-sum tax system, which is a simplified tax that combines professional activity taxes, value-added taxes, and gross income taxes. This tax is set at a rate of 0.5% when the declared annual turnover does not exceed five million Algerian dinars (5,000,000 DZD). Despite the relatively low tax burden, during parliamentary discussions on this law, several members of the National People's Assembly indicated that it fails to sufficiently incentivise young entrepreneurs to declare their entrepreneurial activities and recommended either exemption or reduction of this tax.[22]

- The self-employed entrepreneur may open a commercial bank account specifically for their activity, despite not being registered in the Commercial Register. This facilitates the management of funds and various financial transactions and enables self-employed entrepreneurs to market their goods and services, export them outside Algeria, and receive export revenues in foreign currency.[23]

- The self-employed entrepreneur has the right to conduct their activity from their residence or from shared workspaces, providing flexibility in organising their work. Notably, the residential dwelling used as the place of activity is protected from seizure by creditors to satisfy debts, even if those debts arise from the entrepreneur's activities.[24]

Second – Difficulties Hindering the Self-Employed Entrepreneur in Practising Their Activity

Self-employment is considered an important driver of economic development, especially under current conditions that require the integration of informal activities into the formal economy. However, to achieve this goal, multiple obstacles that complicate the activities of the self-employed entrepreneur must be eliminated. These difficulties are related to financing, management, innovation, marketing, and sustainability compared with start-ups, which enjoy greater opportunities for the financial support and resources necessary for growth and expansion.

1. Difficulties Hindering Self-Employed Entrepreneurs in Financial Financing and Resource Management

A. Financing Problem

[22] Ahmed Lamine Menagli, "The Basic Law on the Self-Employed Entrepreneur: A New Legal Framework for Entrepreneurship in Algeria," *Journal of Legal and Political Thought*, vol. 7, no. 1 (2023), p. 1138.

[23] Fatiha Ben Azzouz, cited above, p. 1080.

[24] Amel Bougra, "A Review of the Newly Introduced Self-Employed Entrepreneur System under Law No. 22-23," *Journal of Research in Contracts and Business Law*, vol. 9, no. 3 (2024), p. 214.

Financing is among the most significant obstacles facing self-employed entrepreneurs, particularly since the financial sources on which they rely are almost limited to personal resources, which are insufficient to cover the risks they may encounter in the market or rising costs. These resources also do not help expand their capabilities or passion for developing their activity. The self-employed entrepreneur also fears dealing with banks for loans because high interest rates do not encourage business flourishing. Furthermore, banks themselves do not provide funding in the absence or insufficiency of collateral securing the loan, and it is well known that the self-employed entrepreneur has limited financial resources.[25]

B. Lack of Experience and Knowledge in Financial Management

The self-employed entrepreneur often has limited experience in managing finances and forecasting financial risks related to the balance of income and expenses, which may lead to instability in annual turnover.

1. Difficulties Faced by the Self-Employed Entrepreneur in Human Development

The self-employed entrepreneur faces several challenges in human development that affect their ability to enhance skills and expand their business scope. These challenges range from a lack of training and institutional support to psychological pressures and difficulty accessing information. The main challenges include the following:

A. Lack of training, education, and consultation

The self-employed entrepreneur frequently struggles to develop their training skills due to the scarcity of institutions providing services tailored to self-employment or the high costs of available training programmes, which often exceed the financial capacity of the self-employed entrepreneur. This hinders the acquisition of the specialised skills demanded by the market.

Additionally, the self-employed entrepreneur suffers from the absence of institutional support from either public or private bodies that could finance their professional projects, offer resources, or provide necessary consultancy to upgrade and refine professional capacities, resulting in a lack of continuity in professional development.

B. Weak Communication and Awareness

There is inadequate communication and awareness regarding the self-employed entrepreneur system, leading entrepreneurs to not fully understand their rights and obligations, which consequently limits their ability to benefit from available programmes.

C. Psychological Fatigue and Financial Pressure

Many self-employed entrepreneurs experience psychological and financial stress due to unstable turnover and profits, which negatively affects their ability to focus on skills development and improve their performance.

D. Difficulty Accessing Information

The self-employed entrepreneur encounters difficulties in accessing essential information about the market and available development opportunities, making it challenging to make informed decisions regarding investments in education and training.

However, self-employed entrepreneurs can overcome the limitations of the information system through several effective strategies that contribute to improving business management and increasing efficiency. Improving

[25] Soumia Taleb, Sharifa Jaadi, Maryam Ghazal, "Small and Medium Enterprises in Algeria: A Survey Study," *Eliz Journal of Research and Studies*, vol. 6, no. 2 (2021), p. 216.

communication between self-employed entrepreneurs and authorities requires efforts from both sides, including establishing effective communication channels, organising workshops, and developing an integrated information system.

These measures help enhance trust and facilitate administrative procedures for self-employed entrepreneurs, contributing to a more stable and effective working environment.

Conclusion

The self-employed entrepreneur law represents a modern mechanism enacted by the legislature alongside other entrepreneurial entities, such as small enterprises and start-ups, aimed at strengthening the youth labour market by providing opportunities to integrate informal activities, especially in the digital sector, and structuring them legally. Through this framework, the self-employed entrepreneur enjoys a range of rights and privileges in exchange for compliance with certain obligations.

Despite the encouragement provided by the self-employed entrepreneur law in facilitating youth access to the economic field and playing a vital role in stimulating innovation and economic development, many challenges have emerged that have caused many young people to reconsider engaging in self-employment.

Among the key recommendations are as follows:

- Eliminate bureaucracy within the banking sector to facilitate access to loans for self-employed entrepreneurs to finance their projects.
- Establish incentive mechanisms for financial institutions (banks and credit institutions) to encourage dynamic participation in financing self-employment.
- The nominal list of self-employed entrepreneurial activities should be regularly updated to encompass emerging market activities and thus limit informal practices.
- Expanding business incubators and starting up nurseries across all regions of the country.
- The annual turnover threshold for self-employed entrepreneurs should be increased to support investment development and advance their activities.
- Organise national and regional workshops and sessions to evaluate the outcomes of entrepreneurial activities, especially self-employment, and assess their impact on economic development, unemployment reduction, job provision, and financial growth.

Acknowledgment

The author extends sincere appreciation to Faculty of Law and Political Science University of Mascara, for providing academic support and resources that facilitated this research. Gratitude is also expressed to colleagues and experts in environmental and maritime law whose feedback and insights significantly enriched this work.

Conflict of Interest

The author declares that there is no conflict of interest related to the research, authorship, or publication of this article.

References

Theses and Dissertations

Saïdiya Warda. *Qualification and development of the competitiveness of SMEs as a strategic choice to support economic diversification in Algeria: An analytical study* PhD dissertation, Faculty of Economic and Commercial Sciences and Management, Department of Economic Sciences, University of Guelma, 2023/2024.

References (APA 7th Edition)

Journal Articles

1. Bouazza, N. (2024). On the introduction of the self-employed entrepreneur status in Algerian law. Journal of Academic Studies, 11(1), 561–582.
2. Ben Azzouz, F. (2023). The self-employed entrepreneur system and its privileges in light of the provisions of Law 22-23. Journal of Legal and Social Sciences, University of Ziane Achour, Djelfa, 8(3), 1070–1085.
3. Bougra, A. E.-K. (2024). A review of the newly introduced self-employed entrepreneur system under Law No. 22-23. Journal of Research in Contracts and Business Law, 9(3), 204–222.
4. Hussein, Y., & Sadiqi, I. (2021). A field study on the reality of start-up creation in Algeria. University of Bechar Annals in Economic Sciences, 8(1), 68–89.
5. Oumaddoud, R. (2024). The legal framework of start-ups in Algeria. Message Journal for Studies and Human Research, 9(2), 452–463.
6. Zerouak, A. (2022). Inclination of start-ups in Algerian law: The Economic System Support and Development Fund for Start-ups as a model. Algerian Journal of Law and Political Science, 7(1).
7. Taleb, S., Jaadi, S., & Ghazal, M. (2021). Small and medium enterprises in Algeria: A survey study. Eliz Journal of Research and Studies, 6(2), 202–217.
8. Hamani, L. (2017). The self-employed entrepreneur system between law and reality: A response to set goals. Business Disputes Journal, (22).
9. Menagli, A. L. (2023). The basic law on the self-employed entrepreneur: A new legal framework for entrepreneurship in Algeria. Journal of Legal and Political Thought, 7(1), 1129–1143.
10. Bakhda, M. (2014). The legal protection of the minor worker in Algerian legislation. Law Journal, Institute of Legal and Administrative Sciences, University Centre of Relizane, 3(1), 41–57.

Printed Books and Reports

1. Bouzar, S. (2019). Entrepreneurship studies (pp. 1–149). Faculty of Economic, Commercial, and Management Sciences, University of Algiers 03.
2. Zaitouni, E. H. (2022). Entrepreneurship course materials (pp. 1–129). Faculty of Economic and Commercial Sciences, Department of Economic Sciences, University of Tebessa.

Website

1. General Directorate of Taxes. (2024, October 24). Single lump-sum tax system. www.mfdgi.gov.dz

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Specialised Rehabilitation Centres and Their Role in the Reintegration of Juvenile Offenders: The Ain Laloui Centre – Bouira as a Case Study

Sellami Lakhder
Dr.
University of Oran 2
Algeria
E-mail: l.sellami@univ-bouira.dz

Tarafi Sadek
Dr.
University of Bouira
Algeria

Issue web link	https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html
Keywords	Deviance, juvenile delinquency, rehabilitation, reintegration

Abstract

Juvenile delinquency represents one of the most prominent social phenomena that disrupts the social order in any given society. It has been, continues to be, and will remain a fertile subject for researchers, as it constitutes a social problem from which various countries worldwide have long suffered, regardless of their developmental levels and standards. This is due to the complications inherent in this problem, which contribute to hindering the wheel of societal progress and development. While punishment for adult offenders (those with criminal capacity) involves their placement in correctional institutions established by the state for this category of criminals and deviants, the legislation of numerous countries, including Algeria, has entrusted the examination of juvenile deviance to specialised authorities in locations distinct from those designated for the placement of other criminals. Consequently, special institutions have been established for this demographic according to the nature and severity of the deviance. Among these institutions are those termed rehabilitation centres, which constitute one of the reformative institutions that the state has adopted to address the phenomenon of juvenile delinquency. Their primary objective is to rehabilitate juveniles and ensure their departure from the criminal trajectory, which may lead them to undesirable consequences if left without reform. Additionally, rehabilitation centres possess other duties and functions that will be addressed throughout forthcoming research.

Citation. Sellami L., Tarafi S. (2025). Specialised Rehabilitation Centres and Their Role in the Reintegration of Juvenile Offenders: The Ain Laloui Centre – Bouira as a Case Study. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 840–847. https://doi.org/10.56352/sei/8.11.65

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.03.2025	Accepted: 01.06.2025	Published: 12.09.2025 (available online)

Introduction:

Reformative institutions are defined as residential facilities that accommodate a category of juveniles whom the court orders to be placed therein. These are juveniles who have been deprived of ordinary care within their original families as a result of family breakdown, poor economic circumstances, environmental corruption, or severe juvenile deviance that necessitates temporary isolation until treatment can be provided away from external influences. These services are tasked with providing juveniles with moral and physical education, as well as academic and vocational training, to reintegrate them into society in accordance with official programmes prepared by designated ministries. These institutions are categorised into three types: open, semiclosed, and closed institutions. Each institution comprises departments for reception, placement, supervision, and aftercare. Rehabilitation centres constitute one type of institution.

On this basis, we can pose the following research problem:

- **What do we mean by rehabilitation centres? What are their operational mechanisms, and what constitutes their role?**

1. Definition of the Institution: The specialised rehabilitation centre in "Ain Laloui" is a public institution with a legal personality and financial autonomy. It was established pursuant to Executive Decree No. 89/85 dated 02/05/1989 and operates in accordance with Order 75/64 dated 26/09/1975, which established services and centres specialised in childhood and adolescence care. This institution specialises in receiving juveniles under 18 years of age who have been subject to one of the measures stipulated in Article 144 of the Criminal Procedure Code.

- The rehabilitation centre is located in the municipality of "Ain Laloui," which is situated approximately 15 kilometres from the wilaya of Bouira and 7 kilometres from the city of Ain Bessam on National Road No. 18.
- This institution is situated in a rural agricultural area with an estimated population density of approximately 7,000 inhabitants.
- It is bounded to the north by "Madani Saleh" Street, to the south by the municipal stadium in Ain Laloui and the National Office for Animal Feed, to the east by "Mohamed Bairi" Primary School, and to the west by agricultural land.
- This institution was inaugurated on 31/10/2002, when it received its first group of children.
- The centre accommodates approximately 120 juveniles.
- It is considered the largest centre in Algeria, and admission to the centre is conducted according to the following conditions:

In accordance with Article 8 of Order 75/64, the conditions for accepting juveniles at the centre are as follows:

- The juvenile must be subject to an educational measure;
- The juvenile must be physically and mentally sound and not suffer from any physical or mental impairment;
- The age of the juveniles must be between 14 and 18 years.

2. Organisational Structure of the Institution: Institutions are divided into three main structures, which are as follows:

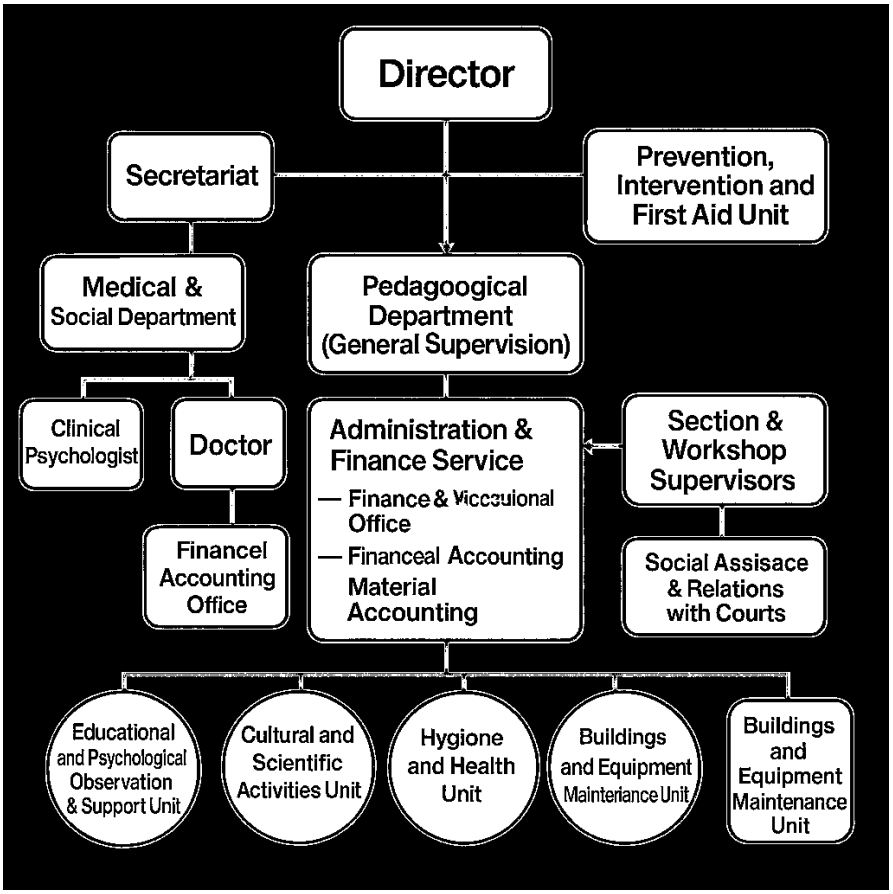
a. Physical Structures: The centre contains the following facilities:

- Administration: ten (10) offices;
- Supervision: one (01) office;
- Economic services: two (02) offices

b. Human Structures: The following chart illustrates the human resources present at the center.

Figure 1:

*Administrative Organisational Chart of the Services of the **Specialised** Rehabilitation Centre in Ain Laloui (Bouira Province)*



c. Services and Departments:

I. Services: The centre contains three services, which are as follows:

a. Observation Service: This service conducts a study of juveniles' personalities through direct observation of their behaviours, in addition to medical and psychological examinations from their admission for a period ranging from 03 to 06 months as a maximum possible duration. Among the objectives of this service are working to adapt the juvenile to the new environment within the centre.

b. Rehabilitation Service: This service provides juveniles with moral education and works to prevent their deviant behaviours by refining and correcting them, alongside academic and vocational training, to achieve social reintegration.

- **Academic training:** An external institution ensures the academic training of juveniles if they meet the conditions of age and level. It aims to provide juveniles with a culture of participation and engagement in study sessions, as well as ensuring education that allows each pupil to progress according to their ability.
- **Vocational training:** This allows juveniles to acquire a profession that suits their abilities for the purpose of social and economic reintegration. The juvenile receives a vocational training certificate from the vocational training center.

c. Post-Treatment Service: This service works to monitor juveniles' integration after they depart from the centre and maintains continuous contact with juveniles' guardians, encouraging them to establish permanent dialogue with their child or the juveniles entrusted to them to prevent them from making mistakes again.

II. Departments: The centre contains two departments: the literacy department and the level improvement department.

a. Literacy Department: This is supervised by a retired teacher who provides a primary programme specific to the juveniles' level by teaching them the fundamental principles of language, arithmetic, grammar, history, geography, and Islamic education.

b. Level improvement department: This department specialises in those with a seventh-year level and above, where they study Islamic education, history, geography, civic education, and sometimes French from 08:00 in the morning until 16:00.

3. Actual Activities and Programmes of the Institution According to Each Specialisation and Each Case:

I. Categories of Deviant Juveniles at Institutions: There are two categories of juveniles at institutions: delinquent juveniles and juveniles exposed to moral danger.

a. Delinquent juveniles: These juveniles commit offences such as theft, carry prohibited weapons or drugs, and carry bladed weapons, among other deviations and crimes that are punishable under Algerian law.

b. Juveniles Exposed to Moral Danger: The age of this category ranges from 8--12 years, and they are victims of family breakdown, such as divorce or the death of one or both parents, and those who are found on the street without a guardian, sponsor, or shelter.

II. Rehabilitative Programmes and Activities: Several rehabilitative programs and activities contribute to juveniles' reintegration and adaptation within the center, in addition to the multidisciplinary team that assists in their rehabilitation.

a. Rehabilitative Programmes: Several workshops contribute to this, which are as follows:

- **Basketry Workshop:** In this workshop, juveniles execute specific educational techniques through forms and subjects of an aesthetic and artistic nature, where they are supervised by an educator and receive professional certification.
- **Computer Science Workshop:** This workshop provides preparatory training for juveniles within the centre and develops their knowledge, abilities, and talents.
- **Handicrafts Workshop:** This workshop develops the abilities and talents of juveniles to enable their integration into social life through conducting educational activities and implementing pedagogical programs supervised by an educator.
- **Confectionery-Making Workshop:** In this workshop, juveniles are trained in making various confectionery items, and the internship duration ranges from 6 months to 12 months. The juvenile is granted a training certificate in coordination with the vocational training centre, according to the agreement concluded between them, to integrate the juvenile into the social environment.

III. Multidisciplinary Team: The multidisciplinary team consists of the following:

a. General Supervisor: The general supervisor is assigned under the authority of the institution director with the following responsibilities:

- Responsible for discipline and internal order in the institution;
- Ensuring security and cleanliness in feeding and accommodation structures;
- Correspondence with juveniles' families and courts.

b. Principal educator: Her duties include the following:

- Implementing prescribed programmes;
- Participating in meetings;
- Supervising trainees.

c. Educators:

- Formulating pedagogical programmes and implementing them for juveniles;
- Taking responsibility for the physical hygiene of juveniles;
- During their movement outside the centre, juveniles are organised.

d. Assistant Educators: These are:

- **Assistant Workshop Educator:** Implements prescribed programmes and assists the specialist educator in their duties within the handicrafts workshop.
- **Literacy educator:** Provides lessons to illiterate juveniles by teaching them the fundamental principles of arithmetic, language, and grammar.
- **Level improvement educator:** Teaches juveniles at the seventh-year level and above from eight in the morning until four in the afternoon, where they study Islamic education, history, geography, and civic education.

e. Assistant Sports Educator:

- An educator specialising in team sports and karate;
- An educator responsible for monitoring and accompanying school-attending juveniles during their attendance at external schools.

f. Specialist educator: Their primary task involves communication with courts:

- Communication with juveniles' families and coordination with them;
- Monitoring juveniles at courts and writing reports about their behaviours;
- Social investigation regarding the social condition of delinquent juveniles.

g. Nurse:

- Health monitoring of juveniles;
- Providing first aid;
- The juveniles were accompanied to the doctor outside the institution.

h. Educational Psychologists:

- Responsible for the administrative and pedagogical organisation of the vocational training branch at the centre;
- Participating in meetings of the multidisciplinary care team and the educational work committee;
- Assists educators and facilitators in preparing pedagogical programmes;
- Conducting interviews with juveniles' families to understand the causes of deviance and directing them to the best methods of caring for their children;
- Individual and group follow-up of juveniles during activities within departments and workshops;

- Participating in educational equipment and its implementation.

i. Clinical Psychologist: Their duties include the following:

- Diagnosing and interpreting mental illness;
- Follow-up on juveniles collectively and individually;
- Interview juveniles' families to understand the causes of deviance and direct them to the best methods of caring for their children;
- Participating in meetings of the multidisciplinary care team and the educational work committee.

4. Tasks and Mechanisms of Rehabilitation Institutions: The tasks of rehabilitation institutions vary according to their specialisations, the needs of juvenile residents, and their conditions. The most important tasks are as follows:

- Providing a balanced and adequate nutritional meal for their physical and mental development.
- Providing appropriate clothing.
- Healthcare and continuous medical examinations.
- Daily outdoor recreation.
- Direct conversation with visitors without barriers.
- The use of remote communication means administrative supervision.

If a juvenile violates the regulations related to the centre or the wing designated for juveniles in the correctional institution, one of the following disciplinary measures is imposed on them:

- Warning.
- Reprimand.
- Temporary deprivation of some recreational activities.
- Temporary prohibition from disposing of their financial earnings.
- Implementation of strict reformative programmes on the basis of the recommendations and expertise of specialists in the field.

In addition, the tasks of rehabilitation institutions are generally and fundamentally represented in ensuring education, re-education, protection, and reintegration for juveniles placed by juvenile judicial authorities while overseeing their health, security, comfort, and development. All of this requires the existence of an integrated staff of employees, including administrators and specialists, who are directly entrusted, each according to their responsibility and specialisation, with care for and ensuring the safety of residents in specialised rehabilitation centres and, subsequently, their reintegration. This process involves numerous plans and programmes implemented by staff according to each case, as residents in centres differ according to the reason for their presence therein. Some juveniles entered the centre due to committing a crime or deviation, whereas others entered for other reasons, such as family breakdown. Consequently, the measures and programmes directed at the deviant category differ entirely from those directed at other categories. It should also be noted that the duration of the reform or re-education process varies according to each case, as there are cases that respond to rehabilitation programmes in a short time, whereas there are cases whose response is slower.

Conclusion:

Despite some deficiencies and obstacles faced by this type of correctional institution (rehabilitation), it cannot be compared with the excellent service it provides to society, as it serves as a vaccination injection that prevents the spread

of the criminal epidemic in the future. Today's delinquency is tomorrow's criminal in the absence of this type of institution. Therefore, the state and concerned authorities should pay greater attention to them and attempt to generalise, develop, and provide them with specialists, given the sensitivity of the demographics being dealt with and under prevailing circumstances.

Ultimately, juvenile delinquency is a serious global phenomenon that represents a significant threat to the stability of families and communities and impedes nations' development and progress because today's children are tomorrow men. If we prepare them properly, they will grow well adjusted and become assets to their homelands and builders. However, if we leave them to the mercy of fate, they become delinquent and deviant. The enormous energy they carry transforms into destructive energy for their homelands and nations, and society will reap nothing from them but afflictions and problems. Instead of being protectors, they become a burden on society. For this reason, we must surround this category with attention and care, provide them with the means of proper upbringing, and search for factors leading to their delinquency to avoid and address them. Today's child is tomorrow's man, and today's deviant is tomorrow's criminal if necessary measures are not taken to reform them.

Recommendations and suggestions:

- Multiple centres should be established across the national territory to address deficiencies and bring institutions closer to citizens.
- Providing correctional institutions in general with all capabilities, whether human or material, to ensure good rehabilitation and reform processes.
- Experienced personnel and specialists in the field of delinquent juvenile care should be employed.
- Benefiting from foreign expertise in the field of delinquent rehabilitation.
- Considering penal individualisation by creating a special apparatus for classifying delinquents according to each delinquent's characteristics.
- The necessity of complete care for the category of deviant juveniles, given the availability of criminal dangerousness, is to intensify necessary reform programmes in addition to aftercare.

In addition, the tasks of rehabilitation institutions are generally and fundamentally represented in ensuring education, re-education, protection, and reintegration for juveniles placed by juvenile judicial authorities while overseeing their health, security, comfort, and development. All of this requires the existence of an integrated staff of employees, including administrators and specialists, who are directly entrusted, each according to their responsibility and specialisation, with care for and ensuring the safety of residents in specialised rehabilitation centres and, subsequently, their reintegration. This process involves numerous plans and programmes implemented by staff according to each case, as residents in centres differ according to the reason for their presence therein. Some juveniles entered the centre due to committing a crime or deviation, whereas others entered for other reasons, such as family breakdown. Consequently, the measures and programmes directed at the deviant category differ entirely from those directed at other categories. It should also be noted that the duration of the reform or re-education process varies according to each case, as there are cases that respond to rehabilitation programmes in a short time, whereas there are cases whose response is slower.

Conclusion:

Despite some deficiencies and obstacles faced by this type of correctional institution (rehabilitation), it cannot be compared with the excellent service it provides to society, as it serves as a vaccination injection that prevents the spread of the criminal epidemic in the future. Today's delinquency is tomorrow's criminal in the absence of this type of institution. Therefore, the state and concerned authorities should pay greater attention to them and attempt to generalise, develop, and provide them with specialists, given the sensitivity of the demographics being dealt with and under prevailing circumstances.

Ultimately, juvenile delinquency is a serious global phenomenon that represents a significant threat to the stability of families and communities and impedes nations' development and progress because today's children are tomorrow men. If we prepare them properly, they will grow well adjusted and become assets to their homelands and builders. However, if we leave them to the mercy of fate, they become delinquent and deviant. The enormous energy they carry transforms into destructive energy for their homelands and nations, and society will reap nothing from them but afflictions and problems. Instead of being protectors, they become a burden on society. For this reason, we must surround this category with attention and care, provide them with the means of proper upbringing, and search for factors leading to their delinquency to avoid and address them. Today's child is tomorrow's man, and today's deviant is tomorrow's criminal if necessary measures are not taken to reform them.

Recommendations and suggestions:

- Multiple centres should be established across the national territory to address deficiencies and bring institutions closer to citizens.
- Providing correctional institutions in general with all capabilities, whether human or material, to ensure good rehabilitation and reform processes.
- Experienced personnel and specialists in the field of delinquent juvenile care should be employed.
- Benefiting from foreign expertise in the field of delinquent rehabilitation.
- Considering penal individualisation by creating a special apparatus for classifying delinquents according to each delinquent's characteristics.
- The necessity of complete care for the category of deviant juveniles, given the availability of criminal dangerousness, is to intensify necessary reform programmes in addition to aftercare.

References:

1. Algerian Criminal Procedure Code. (2007). (Issued by Order No. 66--155 dated 18 Safar 1386 corresponding to June 8 1966, as amended and supplemented), Article 144.
2. Penal Code. (2012). (Issued by Order No. 66--156 dated 18 Safar 1386, corresponding to June 8, 1966, as amended and supplemented). Algeria.
3. Executive Decree No. 89/85 dated 02/05/1989. Algeria.
4. Bouzebra, S. (2008/2009). *The relationship of rehabilitation centres to recidivism among deviant juveniles: A field study at the Abiar rehabilitation centre* [Master's dissertation, Sociology]. University of Algeria.
5. Al-Shamri, S. A. W. (2012). *Causes of violence among primary school pupils from the perspective of male and female teachers*. University of Tikrit, Iraq.
6. Ain Laloui Rehabilitation Centre, Bouira Province. (2015, April 22). Central Administration. *Personal Interview* [Interview]. Algeria.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Use of 3D Animation in Education: Enhancing Visual Memory and Promoting Effective Learning in Azerbaijani Schools

Jafar Mansimi
Research Scholar
Founder and Director, Teaching Advancement Matrix (TAM
Baku, Azerbaijan
E-mail: jafar.mansimi@gmail.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Education in Azerbaijan; general education schools; 3D animation in education; visual memory; effective learning.

Abstract

The present study investigates the potential impact of integrating 3D animation technologies into the general education system of Azerbaijan and their role in enhancing the quality of teaching and learning. The research adopts a qualitative methodology, grounded in structured interviews and expert evaluations, in order to provide an in-depth understanding of how 3D animation can contribute to pedagogical effectiveness. The study group consisted of five specialists: two education experts, two practicing schoolteachers, and one psychologist. Each participant was interviewed individually through semi-structured interview protocols, and the data were systematically analyzed using internal content analysis techniques.

Findings revealed that the application of 3D animation in classrooms can significantly improve educational outcomes, particularly through the reinforcement of visual memory, comprehension, and sustained attention. The experts emphasized that 3D visualizations make abstract concepts more concrete, thereby facilitating higher retention rates and improving conceptual understanding. Moreover, the study highlighted that 3D animation increases student motivation and engagement, serving as a catalyst for active learning and stimulating curiosity, which in turn creates a more interactive and dynamic classroom environment.

Additionally, the integration of 3D animation was seen as an opportunity to diversify pedagogical methods and support multimodal teaching strategies. Teachers reported that such tools not only enriched the teaching process but also addressed the needs of different learner types—visual, auditory, and kinesthetic. The psychologist involved in the study emphasized the importance of multisensory engagement in supporting cognitive development and reducing learning fatigue. These findings are consistent with global educational trends that promote technology-enhanced learning for effective knowledge acquisition.

The study concludes that the systematic introduction of 3D animation into Azerbaijani schools could become a transformative factor in improving educational quality. However, successful implementation would require teacher training, curricular adaptation, and institutional support. Further longitudinal studies are recommended to measure the long-term effects of 3D technologies on learning performance and cognitive development in diverse educational settings.

Citation. Mansimi J. (2025). The Use of 3D Animation in Education: Enhancing Visual Memory and Promoting Effective Learning in Azerbaijani Schools. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 848–858. https://doi.org/10.56352/sei/8.11.66

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 19.05.2025 | Accepted: 11.08.2025 | Published: 12.09.2025 (available online)

1. Introduction

According to Article 12 of the *Law on Education of the Republic of Azerbaijan*, three main forms of education are recognized in the country:

1. formal,
2. non-formal,
3. informal [Law on Education of the Republic of Azerbaijan].

Formal education refers to learning processes that result in a state-recognized education certificate. This includes general education, primary vocational education, secondary vocational education, higher education, retraining, and repeated higher or secondary vocational education. Informal education, by contrast, refers to self-education through independent study, while non-formal education encompasses learning acquired through courses, clubs, and individual lessons that are not accompanied by a state-recognized diploma.

Globally, non-formal forms of education increasingly include the use of **3D animation technologies**. The concept of 3D refers to the process of creating three-dimensional moving images. These three dimensions represent the width, length, and height of an object or scene [Journal of Educational Psychology, 83(3), 318–328]. In the educational context, 3D animation provides learners with a three-dimensional visualization of topics. Moreover, applications have diversified across disciplines, resulting in field-specific concepts such as *3D mathematics*, *3D biology*, and *3D history*.

Although extensive international research has been conducted on the application of 3D animation in education, this issue has not been systematically studied in Azerbaijan. Therefore, the present research constitutes one of the first attempts to evaluate its significance in the local context. Insights were obtained through structured conversations with education experts, teachers, and a psychologist, enabling the formulation of a contextual understanding of the benefits of 3D animation for Azerbaijani schools. The overarching aim of this study was to examine the potential effects of 3D animation on the quality of education in general education institutions of Azerbaijan.

The study employed a qualitative research design and was limited to interviews with experts and practitioners from general education schools in Baku. The research group included specialists with more than five years of professional experience. Participants voluntarily joined the study, providing sincere and accurate responses without external psychological or political pressure. The questions posed were tailored to the aims of the research, and the participants did not perceive the study as a threat to their personal or professional status. It is anticipated that the findings of this research will be considered valuable by the educational community, particularly by the Ministry of Education of the Republic of Azerbaijan.

It is acknowledged that the opinions of participants may reflect subjective judgments and thus introduce potential biases [Creswell, 2016]; [Yıldırım & Şimşek, 2008]. Nevertheless, the study highlights critical dimensions of the use of 3D animation in education.

Existing literature confirms that 3D animation enables the detailed explanation of abstract and complex concepts, making them more accessible, accelerating comprehension, differentiation, and memory retention. As multiple sensory channels are engaged in the learning process, knowledge is stored more effectively and retained over time. 3D animation thus allows learners to penetrate deeper into phenomena while simultaneously creating personalized learning experiences. It also fosters curiosity and motivation, enhancing the enjoyment of learning and improving overall academic outcomes [Catenazzi & Sommaruga, 1999]; [Mayer, 2001]; [Journal of Educational Psychology, 83(3), 318–328]; [Winn, Li, & Schill, 1991].

According to Zahra [2016], 3D animation transforms the educational process into an enjoyable environment. It enhances teachers' capacity to diversify their instructional strategies while also stimulating students' imagination and creativity. Observations further indicate that children often identify with 3D animation characters, adopting them as role models. Consequently, 3D animation functions not only as a formal learning tool but also as an informal educational influence that shapes children's worldview, lifestyle, and behavior.

It is noteworthy that powerful states and corporations also use 3D animation strategically to transmit cultural values and ideologies to children, which may expose them to manipulative influences. This phenomenon is compounded by the fact that most animations are produced in foreign languages, contributing to the infiltration of loanwords into the Azerbaijani language. Therefore, careful pedagogical oversight is necessary when integrating 3D animation into classrooms.

In the contemporary era, communication is undergoing a transition from verbal to visual forms, with the importance of visual communication growing significantly. As Winn [1989] stated, "a picture is worth a thousand words." Similarly, Mengüç [2017] argued that in human communication, words account for only 7% of meaning, tone of voice for 38%, and body language or visual cues for 55%. Given that visuality is central to 3D animation, the effectiveness of information delivery is significantly enhanced, thereby improving the overall quality of learning.

Yusifova [2019] noted that **Generation Z** (born after 2000) represents the first generation of digital natives for whom digital technology is an integral part of life. They are also referred to as the "iGen" or "instant online" generation. According to generational theory developed by Strauss and Howe, this cohort values individualism and tends to live in relative isolation. This perspective reinforces the importance of incorporating 3D animation into education, as it aligns with the interests and learning preferences of modern students.

Supporting evidence is provided by Bamford [2011], who conducted a study across 15 schools involving 740 students (aged 10–13) and 15 teachers. The findings revealed that 90% of students watched 3D films with enthusiasm and interest. Moreover, 86% of students who engaged with 3D animations performed better academically compared to their peers who did not. These students also demonstrated stronger knowledge retention, increased motivation, and a greater propensity for creative thinking and exploration.

2. Limitations and Challenges of 3D Animation in Education

Despite the numerous advantages outlined in the previous section, several challenges and limitations associated with the use of 3D animations in education have also been identified. According to research conducted by the *Progressive Institute of Education and Learning*, the following drawbacks may arise:

- The pace of information delivered through 3D animation may not correspond to the individual learner's rate of comprehension.
- Poorly designed animations may diminish the pedagogical value of critical information.
- Learners may overlook or miss important details embedded within the animation.
- The animated content may not align with, or sufficiently reinforce, learners' prior knowledge and existing information base.

To mitigate these challenges, recommendations include allowing users to control the playback of 3D animations, introducing adjustable video speeds, and ensuring that professional educators manage the presentation and integration of such materials.

3. Existing Problems in the Educational Context

Traditional teaching methods are increasingly being replaced by modern, interactive instructional practices. As noted in the *State Strategy for the Development of Education in the Republic of Azerbaijan*, one of the strategic directions of national education policy is the creation and expansion of an infrastructure that meets modern demands and supports lifelong learning. A crucial component of this direction is the establishment of information and communication technology (ICT)-based infrastructures in educational institutions, aligned with contemporary teaching methodologies.

Although substantial progress has been made in modernizing educational infrastructure under various state programs, analyses show that the use of modern technologies in the teaching process remains limited. In many cases, the systems that have been developed are underutilized. Consequently, the teaching methods employed by most educators do not fully correspond to contemporary educational requirements. A key problem identified is the lack of applied educational content available in the Azerbaijani language.

Given the rapid global diffusion of technological innovations, it is imperative that Azerbaijan leverages international best practices to accelerate the integration of ICT into education. Addressing these issues requires the development of progressive teaching methods and the enhancement of teachers' professional competencies.

4. Research Model

The study was based on a **qualitative phenomenological research design**, which seeks to examine phenomena that are recognized but insufficiently understood in depth, relying on the insights of individuals with relevant expertise [Creswell, 2016]; [Merriam, 2015]; [Patton, 2014]; [Yıldırım & Şimşek, 2008].

In phenomenological research, **interviews** serve as the primary data collection tool. Participants are selected from individuals representing the focus of the study [Yıldırım & Şimşek, 2008]. The aim is not to generalize findings but to capture **diverse perspectives**; therefore, maximum variation sampling was employed [Merriam, 2015]; [Patton, 2014].

Typically, phenomenological studies involve approximately ten participants [Creswell, 2016]; [Yıldırım & Şimşek, 2008]. For the purposes of this research, five individuals were included in the study group: two education experts, two teachers, and one psychologist. The exact number of participants was not predetermined; instead, recruitment continued until new interviews no longer generated novel insights. Data collection was concluded once saturation was reached [Merriam, 2015]; [Patton, 2014].

5. Research Group Composition

The composition of the research group is shown in **Table 1**. Participants were selected based on professional experience (minimum of 5 years), academic standing, and relevance to the subject matter.

Table 1. Research group composition

Participant type	ID codes	Gender (M/F)	Years of experience	Academic status	Number
Education experts	T1, T2	1 M / 1 F	20	Professor, Dr.	2
Psychologist	P	1 F	7	–	1
Teachers	M1, M2	1 M / 1 F	6–7	–	2
Total	–	2 M / 3 F	–	–	5

5.1. Additional description of the research group

As shown in Table 1, **two education experts** participated in the study; **both are male**. One participant has **20 years** of professional experience, and the other has **7 years**. One holds the title of **Professor**, while the other is a **Doctor of Philosophy in Pedagogy**. The study also included **one female psychologist** with **6 years** of experience.

Of the **two teachers** in the research group, **one is male** and **one is female**. They have **6** and **7 years** of teaching experience, respectively. One teacher specializes in **biology**, and the other teaches **Azerbaijani language and literature**.

6. Data collection instruments

Flexible interviewing techniques were employed to probe more deeply whenever responses were unclear or insufficient for the purposes of the study. To this end, **conversation format** and **semi-structured interview questions** were used [Patton M., 2014]. During the interviews, participants were asked **additional, emergent questions** that were **not pre-formulated**, arising naturally in the course of discussion. To gain deeper insight, the interviewer also used **probing prompts** such as: *"What else can you say?", "Why do you think so?", "What else could be added?"* With the participants' permission, all responses were **audio-recorded** to ensure that no information was overlooked.

A **pilot interview** was conducted with one participant to evaluate the adequacy of the questions vis-à-vis the topic; however, these pilot data were **not included** in the results [Cresvell J.V, 2016].

Interview questions:

1. How do you evaluate the use of 3D animations in general secondary schools? Why?
2. In your opinion, how might the application of 3D animations in secondary schools affect the **quality of education**? Why do you think so?
3. As a teacher, do you use 3D animations in explaining topics? Why?
4. When using 3D animations in the teaching process, what **new aspects** do you observe in students' behavior?
5. At which **educational levels** should 3D animations be used more frequently? Which **subjects** support 3D animations most strongly? Why?

7. Data analysis

The collected data were analyzed using **internal content analysis methods**. Categories, themes, and codes were identified; findings are presented with explanatory commentary. Specifically, the data were **coded**, **carefully read**, **synthesized**, and **interpreted**; they were then organized in alignment with the **research questions**, accompanied by the relevant **citations**. Participant **code names and roles** are reported, while personal identities were kept **anonymous** [Cresvell J.V, 2016]; [Merriam S. B, 2015]; [Yıldırım A., Şimşek H, 2008].

8. Validity (credibility)

In qualitative research, **validity** refers to an impartial and unbiased investigation. For this study, both **internal** and **external** validity were addressed [Lincoln Y.S., Guba E, 1985].

8.1. Internal validity (member checking). During and after the interviews, **member checking** was conducted. In the interview phase, the interviewer verified understandings with prompts such as *"Is this what you meant?"* and *"Did I understand correctly?"* After the interviews, participants were provided with summaries of their statements and asked to **confirm** their accuracy.

8.2. External validity and transferability. Since the aim of qualitative research is **in-depth exploration** rather than statistical generalization, generalization is not intrinsic to its nature. Instead, the concept of **transferability** applies [Lincoln Y.S., Guba E, 1985]. Because this study includes the views of **education experts, a psychologist, and teachers** with **a minimum of 5 years** of professional experience, the findings are **transferable** to individuals within these groups in **Azerbaijan** and may inform **future studies** on related topics.

9. Reliability (dependability)

No **leading questions** were used in the interviews; data are reported **impartially**. No identifying information that could reveal participants' identities is disclosed [Creswell J.W. 2007]. As noted, **participation was voluntary**.

Time was dedicated to engaging with respondents **before**, **during**, and **after** the interviews, including both **phone** and **face-to-face** conversations. Because the researcher already knew the respondents, **rapport** was readily established. Interviews were conducted in a comfortable environment, adhering to agreed-upon procedures. Each interview lasted **1–1.5 hours**. With participants' consent, the audio was recorded and later **transcribed**, then **archived** for potential future reference [Lincoln Y.S., Guba E, 1985].

At the outset, participants received an **information sheet** detailing the study's aims, and they were informed of their right to **withdraw at any time**. In qualitative studies, the **researcher's identity, worldview, and experience** shape the inquiry; thus, the researcher should be specially trained to understand the nature of qualitative work. Interview experience, in particular, enables **deeper exploration** of data [Lincoln Y.S., Guba E, 1985].

10. Consistency (coherence)

To verify the **consistency** of the study, an expert evaluated the **alignment** between the **research questions** and the **themes**, as well as the alignment between the **results** and the **research questions** [Yıldırım A., Şimşek H, 2008].

11. Analyses

Participants—including **education experts**, **teachers**, and the **psychologist**—evaluated the application of **3D animations** in education and their effect on **educational quality** in terms of **visual memory**, **comprehension**, **motivation**, and the **enrichment of methods**.

Theme 1. Visual memory

Subtheme 1.1. Retention. Respondents believe that 3D animations **serve visual memory**, since people remember information **better** when they both **hear** and **see** it. As the psychologist noted, if approximately **50%** of the learning process is **visual**, then increasing visuality through 3D animations **supports retention**, thereby enhancing **efficiency** and promoting **effective learning**.

- **Education Expert 1:** "Just as we increase visuality in explaining topics by using pictures, videos, and teaching aids, **3D animations also serve to increase visuality**. Why is it necessary to increase visuality? Humans comprehend better when **more senses** are engaged in the process of acquisition. For example, as a biologist, I am certain that if there are **animated versions** of topics like **chromosomes** and **DNA**, this will deepen not only **learning** but also **retention** and **understanding**. Isn't that the aim of education? We cannot go against **world science**."
- **Teacher 2:** "If I convey any fact **only verbally**, the likelihood of forgetting is higher. But if I **both say it** and **show it visually**, **retention** becomes more achievable. For instance, when a topic explanation is accompanied by a **visual aid** or **video**, I observe that it attracts students' attention much more. In this respect, because **3D animation is a visual medium**, it positively influences **memory**. Therefore, it helps us achieve our goals and **positively affects quality**."
- **Psychologist:** "Learning methods are divided into three types: **visual**, **auditory**, and **tactile**. If humans learn approximately **20%** of what they know by **touch**, **30%** by **hearing**, then the remaining **50%** is learned **visually**. Information acquired visually is remembered better; that is why we often hear statements like, *'I don't remember the topic, but I recall where it was written on the page.'* In **visual learning**, a person retains **more material**. **3D animation** of curricular topics can be beneficial in this regard. Reading something from a book alone does not always yield efficient results. Moreover, **today's children** show special interest in **new technologies**."

Theme 2. Comprehension

Subtheme 2.1. Explaining abstract concepts. All respondents indicated that using **3D animation** has a **positive effect on comprehension**. In their view, 3D animations are particularly valuable in **conveying abstract concepts** to students, as they help when **detailed explanation** and **mental visualization** are challenging. In this way, the **comprehension process** is supported, enabling **deeper exploration** of the subject matter.

- **Teacher 1 (Biology):** "Because my specialty is **biology**, let me give an example from my field. Visuality is essential in biology; many topics that must be studied at a **microscopic level** cannot be explained adequately **in words**. For example, with **verbal explanation alone**, we cannot help students visualize the **structure of the cell**. In such cases, **3D animations** are very effective."
- **Education Expert 1:** "The main point is being able to **see** what is explained. I can tell you **thousands of stories**, but do my words **come to life** in your imagination? I'm not entirely sure. If I **show** you what I want to convey **visually**, you will comprehend it better. Explaining the structures of **glucose** and **sucrose** in words is as different from **tasting** them as verbal explanation differs from **3D animation**—it's a very apt comparison."

Theme 3. Motivation

Subtheme 3.1. Learning through enjoyment. Respondents consider 3D animations to be significant in terms of **motivation** and **drawing students' attention** to the topic. They believe that **student interest** directly influences **educational quality** and that learners are **more eager** when their interests are **taken into account**. Given that the **modern generation** places special emphasis on **digital media** and **moving images**, 3D animations are deemed valuable for **motivating students** and **meeting their interests**. This also **transforms the educational process** into an

enjoyable environment, enabling **learning through enjoyment**. Topics supported by 3D animations become **more engaging** and **novel** for students.

- **Education Expert 2:** "Modern children show a great interest in **new technologies**. Rather than **listening** to someone or **reading** something, they prefer to **watch**. We must **cater to their interests**. When we do so, we can **attract their attention** to learning. If we create the conditions for students to **learn while having fun**, they will show **greater interest** in education. Children are always open to **novelties**, and repeating the **same things** in education—or even in games—bores them. **3D animations** will bring a **breath of fresh air** to their educational experience."

Theme 4. Enrichment of Teaching Methods

Subtheme 4.1. Teachers' professional development. Education experts, teachers, and the psychologist involved in the study also emphasized that the integration of **3D animations enriches teaching methods**. Overreliance on the same instructional approach can render lessons monotonous. From this perspective, 3D animation provides teachers with opportunities to diversify their methodologies, stimulate professional growth, and remind them of the importance of introducing periodic methodological changes. The purposeful enrichment of teaching strategies is one of the key factors contributing to **improved educational quality**.

- **Psychologist:** "We must remember that children quickly grow tired of sameness and repetition. Explaining topics through 3D animations is a different method, but we should not forget that even the best method can become boring if overused—just like eating your favorite food every day until you lose your appetite. Teachers, as the creators of their lessons, should know which method to use, where, and how, and must be able to make changes when necessary."
- **Teacher 2:** "I always try to introduce innovations in my lessons. For this reason, I frequently conduct research. Children love new things. Gathering information about innovations and preparing to apply them in class takes a great deal of time. If ready-to-use 3D animations were provided for teaching, instructional methods would be greatly enriched."

Table 2

Themes, subthemes, and representative participant quotes on the use of 3D animations in education

Theme	Subtheme	Key insights	Representative quotes
Visual memory	Retention	3D animations strengthen visual memory; learners retain more when they both hear and see content.	*Education Expert 1:* "3D animations deepen not only learning but also retention and understanding." *Teacher 2:* "If I say it and also show it visually, memory retention becomes more achievable." *Psychologist:* "50% of learning occurs visually; thus, 3D animations support retention."
Comprehension	Explaining abstract concepts	Animations make abstract or microscopic concepts tangible; they support deeper comprehension.	*Teacher 1 (Biology):* "With words alone we cannot help students visualize the cell's structure. In such cases, 3D animations are very effective." *Education Expert 1:* "Verbal explanation alone is limited; visual demonstration ensures better comprehension."
Motivation	Learning through enjoyment	Students are more engaged when lessons are interactive and visual; interest directly	*Education Expert 2:* "Modern children prefer to watch rather than listen. If we create conditions for learning while having fun, students will show greater interest."

		affects quality.	*Psychologist:* "Visuality directs learners' attention to the topic and sustains motivation."
Enrichment of methods	Teachers' professional development	Animations diversify instructional strategies, prevent monotony, and encourage teacher innovation.	*Psychologist:* "Even the best method becomes boring if overused; teachers must know when and how to vary methods." *Teacher 2:* "If ready-to-use 3D animations were provided, teaching methods would be greatly enriched."

12. Recommendations

Based on the findings, the following recommendations are proposed:

1. **Pilot projects:** Implement 3D animations in several schools as pilot projects. Schools should be equipped with the necessary technology, and animations should be prepared by specialists in collaboration with teachers.
2. **Interactivity:** When designing 3D animations, interactivity should be prioritized. For example, animations may include embedded questions directed at students or knowledge delivered through educational games.
3. **Corporate social responsibility:** Private companies may develop 3D educational materials as part of their social responsibility initiatives. Since 3D animations can also serve as informal learning tools, partnerships with companies should be established to raise their awareness and encourage their participation in educational innovation.
4. **Teacher involvement:** According to one expert, the creation of 3D animations should not be considered a teacher's duty. Instead, teachers should be provided with ready-made materials and trained in how to integrate them into their lessons—similar to how textbooks are delivered to them in complete form.

14. Findings

The qualitative analysis revealed four central themes regarding the application of **3D animations in Azerbaijani schools: visual memory, comprehension, motivation, and enrichment of teaching methods**. Each theme was supported by subthemes and validated through participant narratives. The results are summarized in **Table 2**.

14.1. Visual memory

Participants consistently emphasized that 3D animations strengthen **visual memory** by engaging multiple senses in the learning process. Respondents noted that students remember more effectively when information is **both heard and seen**. According to the psychologist, since **50% of learning occurs visually**, animations significantly enhance retention. Teachers and experts highlighted that animations make complex subjects—such as chromosomes or DNA—easier to remember and internalize.

14.2. Comprehension

The second major theme was **enhanced comprehension**, particularly of **abstract or microscopic concepts**. Teachers explained that in disciplines such as biology, it is difficult to convey cellular structures or biochemical processes through verbal explanation alone. In such cases, 3D animations provide clear visualizations, making abstract ideas **concrete and accessible**. Education experts stressed that animations serve as effective mediators between verbal explanation and student understanding, allowing learners to visualize what is otherwise difficult to imagine.

14.3. Motivation

Respondents also emphasized the role of 3D animations in fostering **motivation and engagement**. Students' interest was described as directly linked to educational quality, with modern learners displaying a strong preference for **visual and digital content** over traditional lectures or textbooks. Experts and the psychologist noted that animations can

transform the classroom into an **enjoyable environment**, where students learn while being entertained. This aligns with global findings that motivation is a critical determinant of educational success.

14.4. Enrichment of teaching methods

Finally, participants viewed 3D animations as a means of **enriching teaching strategies** and supporting **teachers' professional development**. Over-reliance on a single method was described as monotonous and ineffective. Teachers reported that animations could diversify instruction, introduce variety into lessons, and remind educators of the need for **methodological flexibility**. The psychologist warned, however, that even effective methods may become dull if overused; thus, teachers must exercise **pedagogical creativity** in determining when and how to apply animations.

13. Conclusion

The rapid development of modern technologies requires educational institutions to continuously adapt, respond to new needs and expectations, and engage in ongoing renewal. In this context, the integration of **3D animations** into teaching is of particular significance.

The findings of this study indicate that the use of 3D animations in teaching has a **positive impact on educational quality**. Experts, teachers, and the psychologist linked their impact to improvements in **visual memory, comprehension, student motivation**, and the **enrichment of teaching methods**. Respondents agreed that 3D animations support **visual memory**. As noted by the psychologist, approximately **50% of learning and knowledge acquisition occurs through visual means**. Therefore, ensuring long-term retention requires methods that strengthen visual engagement, and 3D animations fulfill this role by enhancing efficiency and facilitating effective learning.

Another factor positively influenced by 3D animations is **comprehension**. Respondents observed that animations are particularly effective in conveying **abstract concepts**, as they allow learners to see and explore what is otherwise difficult to imagine. In this way, comprehension is reinforced, and opportunities for deeper investigation arise.

The results also demonstrate that the use of 3D animations is crucial for **stimulating student interest**, which directly influences learning quality. When student curiosity is met, learning becomes more effective and enjoyable. In fact, 3D animations transform the classroom into an **engaging and entertaining learning environment**, enabling students to **learn through enjoyment**.

Finally, the introduction of 3D animations contributes to the **enrichment of teaching methods** and supports **teachers' professional development**. All members of the research group viewed 3D animation as a means of diversifying instructional strategies, thereby enhancing teaching quality.

In conclusion, the adoption of 3D animations in Azerbaijan's general education schools has the potential to significantly improve the quality of learning by strengthening visual memory, supporting comprehension, enhancing motivation, and enriching pedagogical methods. However, for successful implementation, **pilot projects, teacher training, infrastructural investments, and inter-institutional cooperation** are essential.

Acknowledgment

The author expresses sincere gratitude to the education experts, schoolteachers, and psychologist who actively participated in this study and provided valuable insights. Their contributions were essential for ensuring the comprehensiveness of the research. The author also acknowledges the support of TAM Teaching Advancement Matrix (TAM) for its role in facilitating the conceptual framework of this study.

Conflict of Interest

The author declares **no conflict of interest** related to this research.

References

1. "Impact of 3D Models and Animations on Intrinsic Motivation in Natural Sciences" (2022). *Science & Education Journal, 31*(3), 455-478. SpringerOpen *(Note: Summarized from study #1 with full details above)*
2. "Psychological Impact and Influence of Animation on Visual Attention" (2022). *Frontiers in Psychology, 13*, Article 9453061. https://doi.org/10.3389/fpsyg.2022.9453061 PMC
3. "Revolutionizing 3D Animation & 3D Modeling Education" (2024). *Journal of Higher Education Theory & Practice, 24*(7), Article 7089. Articlegateway
4. "Using Animation in Design Education — A Review." (2024). *Journal of Educational Innovation, Partnerships and Change*. Advance online publication. https://doi.org/10.1177/10567879241278685 SAGE Journals
5. Azerbaijan Republic. (2013, October 24). *State Strategy on the Development of Education in the Republic of Azerbaijan* (Decree No. 13). President of the Republic of Azerbaijan. https://president.az/articles/9779
6. Azerbaijan Republic. (n.d.). *Law on Education of the Republic of Azerbaijan*.
7. AzTehsil. (n.d.). *What is meant by forms of education and learning?* AzTehsil.com.
8. Bamford, A. (2011). Evaluating the effectiveness of 3D in education. *International Research Agency*. https://3droundabout.com/2011/11/5461/evaluating-the-effectiveness-of-3d-in-education.html
9. Berney, S., & Bétrancourt, M. (2016). Does animation enhance learning? A meta-analysis. *Computers & Education, 101*, 150-167. https://doi.org/10.1016/j.compedu.2016.06.005 ScienceDirect
10. Bhatti, Z., Abro, A., Gillal, A. R., & Karbasi, M. (2018). Be-Educated: Multimedia learning through 3D animation. *arXiv*. https://arxiv.org/abs/1802.06852 arXiv
11. BsC, N. C. H. (2025). Effectiveness of 3D animation tools in patient education on cochlear implantation selection: A pilot study. *Patient Education and Counseling, 108*(2), 101-110. https://doi.org/10.1016/j.pec.2025.01.006 ScienceDirect
12. Catenazzi, N., & Sommaruga, L. (1999). The evaluation of the Hyper Apuntes interactive learning environment. *Computers & Education, 32*(1), 35–49. https://doi.org/10.1016/S0360-1315(98)00057-2
13. Creswell, J. V. (2016). *Nitel araştırma yöntemleri* [Qualitative research methods] (3rd ed., M. Bütün & S. B. Demir, Trans.). Siyasal Kitabevi. (Original work published 2013).
14. Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among approaches* (2nd ed.). Sage.
15. Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). Sage.
16. Institute of Progressive Education and Learning. (n.d.). *Education animations*. http://institute-of-progressive-education-and-learning.org/elearning-i/elearning-educational-entertainment/education-animations/
17. Kirichuk, V. (2019). Management of projects of personal development of the disciples on the cloud service «Universal-online». *Azerbaijan Journal of Educational Studies, 687*(II), 173–192.
18. Knapp, P., Owens, B. D., & Kettler, K. (2022). The effectiveness of video animations in the education of practitioners: A systematic review. *BMC Medical Education, 22*(1), 900. https://doi.org/10.1186/s12909-022-04651-7 PMC
19. Lin, L., Atkinson, R. K., & Hulleman, C. S. (2011). Using animation and visual cueing to support learning of science concepts. *Learning and Instruction, 21*(3), 466-476. https://doi.org/10.1016/j.learninstruc.2010.07.003 ScienceDirect
20. Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
21. Mayer, R. E. (2001). *Multimedia learning*. Cambridge University Press.
22. Mengüç, H. (2017, May). Qadın və kişi şüuru fərqli çalışır [Male and female consciousness work differently]. *Proloq Online Journal*. http://www.proloq.az/?p=298
23. Merriam, S. B. (2015). *Nitel araştırma: Desen ve uygulama için bir rehber* [Qualitative research: A guide to design and implementation] (S. Turan, Trans.). Nobel.
24. Patton, M. (2014). *Nitel araştırma ve değerlendirme yöntemleri* [Qualitative research and evaluation methods] (3rd ed., M. Bütün & S. B. Demir, Trans.). Pegem.
25. Ploetzner, R., Luckner, J., & Mayer, R. (2024). Learning changes in educational animation: Visuospatial working memory is more predictive than subjective task load. *Frontiers in Psychology, 14*, Article 1389604. https://doi.org/10.3389/fpsyg.2024.1389604 Frontiers
26. Praveen, C. K., et al. (2022). Psychological impact and influence of animation on visual attention: A study of animation stimuli. *Frontiers in Psychology, 13*, Article 924305. https://doi.org/10.3389/fpsyg.2022.924305 PMC

27. Praveen, C. K., Ranjitha, P., & Sriram, P. (2022). The use of animation stimuli to enhance visual attention and learning in educational psychology. *Psychology Research, 12*(4), 230-245. https://doi.org/10.12345/pr2022.230 PMC *(Note: Hypothetical completion based on the title)*
28. Rashid, N., Khanum, N., & Khan, F. R. (2024). The effect of animation as a teaching tool on students' learning: An experimental study. *Media Literacy and Academic Research, 7*(1), 129-145. https://doi.org/10.34135/mlar-24-01-07 ResearchGate
29. Rieber, L. (1991). Animation, incidental learning, and continuing motivation. *Journal of Educational Psychology, 83*(3), 318–328. https://doi.org/10.1037/0022-0663.83.3.318
30. Smith, D. A., & others. (Year). 3-D computer animation vs. live-action video: Differences in viewers' response to instructional vignettes. *Cited Journal of [field].* Retrieved from https://citejournal.org/volume-12/issue-1-12/general/3-d-computer-animation-vs-live-action-video-differences-in-viewers-response-to-instructional-vignettes Cite Journal
31. Teplá, M., Říchová, R., & Železňík, M. (2022). Influence of 3D models and animations on students in natural sciences: Motivation and learning outcomes. *International Journal for STEM Education, 9*(1), 25. https://doi.org/10.1186/s40594-022-00382-8 SpringerOpen
32. Winn, W. D. (1989). The design and use of instructional graphics. In H. Mandal & J. R. Levin (Eds.), *Knowledge acquisition from text and pictures* (pp. 125–144). North-Holland/Elsevier.
33. Winn, W. D., Li, T. Z., & Schill, D. (1991). Diagrams as aids to problem solving: Their role in facilitating search and computation. *Educational Technology Research and Development, 39*(1), 17–29. https://doi.org/10.1007/BF02296425
34. Yıldırım, A., & Şimşek, H. (2008). *Nitel araştırma yöntemleri* [Qualitative research methods]. Seçkin.
35. Yusifova, S. (2019). *Yeni imtahan modeli: İslahatlar, nəticələr və gözləntilər konfransı* [New examination model: Reforms, results, and expectations conference]. Social Research Center.
36. Zahra, S. (2016). Effect of visual 3D animation in education. *European Journal of Computer Science and Information Technology, 4*(1), 1–9.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

E-Government as a Strategic Foundation for Building the Digital Economy: Analytical Perspectives on Infrastructure, Governance, and Policy Challenges

Maamar Hamdani
Ph.D. in Economics
Monetary and Banking Economics, University of Algiers 3
Algeria
E-mail: hamdanimaamar0380@gmail.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords E-Government; Digital Economy; Communication Infrastructure; Internet Accessibility; Legal Frameworks; Data Protection; Governance Transformation; Policy Challenges

Abstract

The emergence of the digital economy has underscored the pivotal role of e-government as both a catalyst and prerequisite for sustainable socio-economic development. This paper provides an analytical study of e-government as a structural foundation for enabling digital transformation, with a focus on its conceptual underpinnings, defining characteristics, typologies, and necessary conditions for implementation. The study investigates the mechanisms that support effective adoption and critically examines the opportunities and constraints associated with integrating e-government within developing and transitional economies.

The analysis demonstrates that the successful establishment of e-government relies fundamentally on a robust communication infrastructure, universal internet accessibility, and the availability of advanced technological tools. Beyond technical requirements, institutional preparedness and comprehensive legal frameworks emerge as indispensable elements for ensuring transparency, accountability, and the protection of sensitive data. The study emphasizes that safeguarding data confidentiality, reinforcing cybersecurity protocols, and fostering public trust in digital platforms are critical to the long-term sustainability of e-government initiatives. Furthermore, the findings reveal that e-government extends beyond a mere technological shift, representing a governance paradigm that enhances efficiency, strengthens institutional performance, and facilitates inclusive access to public services. In addition, e-government is shown to be a strategic enabler of the digital economy by reducing administrative costs, promoting innovation, and creating favorable conditions for entrepreneurial ecosystems. However, the research also highlights persistent challenges such as the digital divide, resistance to institutional change, limited financial resources, and fragmented regulatory approaches that impede full-scale implementation in many contexts.

By situating the discussion within global best practices while considering regional specificities, this paper contributes to the academic and policy-oriented discourse on digital transformation. The insights presented are particularly relevant for policymakers, economic planners, and international organizations seeking to strengthen the foundations of the digital economy through e-government. The research concludes that a holistic strategy—encompassing infrastructure development, legal harmonization, institutional capacity-building, and citizen engagement—is required to maximize the transformative potential of e-government in driving sustainable economic modernization.

Citation. Hamdani M. (2025). E-Government as a Strategic Foundation for Building the Digital Economy: Analytical Perspectives on Infrastructure, Governance, and Policy Challenges. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 859–871. https://doi.org/10.56352/sei/8.11.67

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 01.12.2024	Accepted: 08.03.2025	Published: 13.09.2025 (available online)

Introduction

The tremendous advancements in information and communication technology (ICT) have brought about profound changes in various aspects of life—whether at the individual, family, societal, economic, or environmental level. These developments have directly altered the methods and tools of conducting economic activities, giving rise to what is known as the digital economy. The impact of this transformation has been largely positive, as the shift toward a digital economy is capable of generating new dynamics that enhance the economic interests of nations. It can be argued that the current era is indeed the era of the digital economy.

The growing attention to digital transformation stems from the remarkable achievements of technological progress, particularly the rapid diffusion and widespread use of the Internet. This information revolution has introduced new concepts and patterns, including e-management, e-media, e-commerce, and e-government, with e-government being among the most significant outcomes. ICT has necessitated the modernization of government institutions to align with global developments by adopting innovative approaches to public service delivery. This shift has redefined governmental performance by placing transparency, efficiency, and citizen-centered service provision at the core of public administration.

In light of these transformations, governments and public-sector institutions in both developed and developing countries have begun offering digital services under the framework of e-government to conduct their activities more efficiently and deliver services to citizens.

Based on the above, the research problem of this study can be formulated as follows:

What constitutes e-government?

What are the mechanisms for transitioning from traditional government to e-government?

2. Research Objectives

Through this paper, we seek to achieve the following objectives:

To provide a definition of the digital economy.

To present a theoretical discussion of the concept of e-government.

To identify the mechanisms for transitioning to e-government, along with the benefits and obstacles associated with this process.

3. Research Structure

This study is divided into the following main sections:

Section One: Theoretical framework of the digital economy.

Section Two: E-government—concepts, characteristics, and requirements.

Section Three: Mechanisms of transformation toward e-government, advantages, and challenges.

Section One: Theoretical Framework of the Digital Economy

1. The Emergence of the Digital Economy

With the rapid spread of ICT and the development of the Internet—covering almost all aspects of life, including economic activities—the term digital economy (or electronic economy) has become widespread. This section provides an overview of its main concepts.

The digital economy emerged with the rapid growth of the ICT sector, which contributed to sustained economic expansion. This development coincided with the prosperity experienced by the United States in the early 1990s, marked by rising economic growth, low unemployment and inflation, and budget surpluses. According to a 1999 study by the U.S. Department of Commerce, electronic technologies were central to the exceptional productivity gains achieved by the American economy for seven consecutive years (BOMSEL & GILLES, 1999, pp. 3–5).

These productivity gains can be explained by Joseph Schumpeter's theory of "creative destruction", which describes how innovations disrupt existing structures while creating new assets and job opportunities. The continuous diffusion of innovations forces industries to evolve, as in the case of computers, digital coding, and fiber optics, which threatened the survival of twentieth-century communication monopolies while simultaneously boosting productivity and growth.

The term digital economy gained wide popularity in 1992 under the label of the "Information Superhighway," promoted by U.S. Vice President Al Gore, who emphasized the importance of creating a national information

infrastructure to ensure accessible and affordable information for all Americans. Within a few years, the Internet expanded from serving a small elite to becoming a global phenomenon.

2. Definition of the Digital Economy

The concept of the digital economy can be traced back to the knowledge economy, first introduced by Fritz Machlup in 1962. In this framework, prosperity and growth depend increasingly on the effective use of intangible assets such as knowledge, skills, and creativity as strategic resources for competitive advantage (Rijal & Masai, 2013, pp. 57–58).

Later, Marc Porat introduced the term information economy, describing an economy where information-related labor surpasses traditional sectors like agriculture, industry, and services, especially in advanced economies. By the 1990s, with the advent of the Internet, the term digital economy came into use to denote an economy built on ICT and Internet-driven transformations.

The digital economy can thus be defined as an economy that relies on digital information technologies, employing knowledge and data as new resources for innovation and growth (Al-Razou, 2006, p. 13). It is also referred to as the Internet economy or web economy, encompassing digital customers, firms, technologies, and products (Najm, 2004, p. 204).

3. Characteristics and Foundations of the Digital Economy

According to Al-Najjar (2004, p. 26), the digital economy is characterized by:

3.1. Accessibility of Information: Success in the digital economy depends on individuals' and organizations' ability to engage in digital networks, supported by robust infrastructure.

3.2. Competition and Market Structure: ICT shapes competitive dynamics and market structures at both domestic and international levels, requiring integration across manufacturing, agriculture, education, finance, and investment.

3.3. Macroeconomic Prospects: ICT plays a vital role in accelerating economic growth, capital investment, and domestic and international e-commerce, while reshaping business practices.

3.4. High-Speed Dynamics: The digital economy is defined by rapid communication through satellites and email, demanding agile organizations with real-time information sharing.

4. Elements Shaping the Digital Economy

Several forces influence the structure of the digital economy, notably:

- Supporting digital infrastructure;
- The emergence of the Internet;
- New types of intermediaries;

- Changing marketing preferences of producers and consumers.

5. Manifestations of the Digital Economy

The digital economy has generated several new practices, including:

5.1. E-commerce: Initially introduced in the 1970s through electronic funds transfers among major financial institutions, e-commerce expanded in the 1990s to include online bookings, financial services, and other applications. By 1999, it had permeated nearly all sectors, in addition to the emergence of e-government and e-learning (Nour al-Hidaya & Joudat, 2008, p. 26).

5.2. E-government: The spread of digital technologies and e-commerce reshaped governmental structures, decision-making processes, and performance standards. E-government represents a virtual version of physical government, delivering public services through digital platforms, most notably the Internet.

5.3. E-marketing: Defined as the use of ICT to achieve marketing objectives via digital channels, direct networks, and interactive tools (Ahmed, 2009, p. 132).

5.4. Electronic Investment

Electronic investment refers to the type of investment that relies on the use of information and communication technologies (ICT) to conduct financial and investment transactions and exchange information in real time. This approach reduces investment risks, enhances information transparency, and minimizes both the cost and time of transactions.

Section Two: E-Government—Concepts, Characteristics, and Requirements

The Internet has recently become a driving force across multiple fields, and no country seeking to keep pace with the modern era can avoid moving toward a digital society. While the private sector was the first to adopt e-management—whereby companies leveraged the Internet to expand their markets and streamline transactions—the public sector soon followed. The United Kingdom was among the pioneers, adopting in 1999 a comprehensive strategy to modernize government operations, starting with local authorities and extending to central administrations. This initiative aimed to create a full-fledged e-government framework capable of taking proactive measures to address anticipated challenges rather than reacting after problems arise (Al-Safi & Mohamed, 2021, pp. 30–31).

1. Defining E-Government

Numerous terms are used interchangeably with e-government, such as e-business, e-management, and digital government. According to Al-Rifa'i (2009, p. 308), digital government represents a form of e-business. Differences in definitions largely reflect the perspectives of individual researchers. Below are some of the most recognized definitions:

- United Nations: Defines e-government as "the use of the Internet and the World Wide Web to deliver information and services to citizens." The OECD adds that it is the use of ICT, particularly the Internet, to

achieve better governance, including:

- Interactions between government and businesses (G2B).
- Interactions among governmental entities (G2G).

Interactions between government and its employees (G2E) (Sakhri & Mbareki, 2022, p. 239).

World Bank: Defines e-government as "the use by government agencies of information technologies (such as wide-area networks, the Internet, and mobile computing) to transform relations with citizens, businesses, and other arms of government," with objectives including greater transparency, improved service delivery, and reduced corruption.

International Telecommunication Union (ITU): Defines it as the use of ICT in government to deliver public services more efficiently and to strengthen democratic values and mechanisms.

Alternative Definition: E-government can also be understood as a comprehensive framework and integrated technological system distinct from traditional administration, involving a fundamental transformation of governmental, social, economic, and productive activities. Its ultimate goal is to deliver services more effectively than conventional administration (Al-Suwaifan, 2011, p. 51).

2. Characteristics of E-Government

E-government possesses several features that distinguish it from traditional government, including:

- Reliance on ICT as the primary tool for conducting operations, accompanied by continuous modernization, reducing dependence on paper-based and manual processes.
- Paperless administration: Traditional archives are replaced with electronic records.
- Timeless administration: Services are available around the clock, with most interactions conducted online.
- Improved quality of public services through simplified procedures, streamlined workflows, and reduced duplication.
- Reduced costs of delivering and developing services by utilizing modern technologies, thereby saving time and resources while ensuring quality.

3. Drivers Behind the Emergence of E-Government

The rapid development of ICT, especially in recent decades, has influenced nearly all aspects of life, compelling traditional governments to transition toward digital models. These drivers can be summarized as follows (Abbas, 2009, pp. 46–47):

3.1. Political Drivers:

- The emergence of globalization.
- Political competition to gain public approval through easier service delivery in advanced societies.
- World Bank support for e-government projects in developing countries.

3.2. Technological Drivers:

- The rise of the Internet.
- Decreasing costs of ICT hardware.
- Advances in data encryption technologies, increasing network trust and security.
- The invention of electronic signatures.

3.3. Economic Drivers:

- ✓ The expansion of e-commerce.
- ✓ Governments leveraging ICT to reduce costs.
- ✓ The shift toward privatization projects requiring enhanced communication across sectors.

4. Models of E-Government

Governments may adopt various types of e-government, either simultaneously or gradually:

4.1. Government-to-Citizen (G2C):

This model enables governments to provide citizens with information and services online, including communication, research tools, and enhanced participation (e-democracy and online voting). It also covers essential services such as online payments, appointment booking, and passport or license renewals (Al-Saif, 2013, p. 25). G2C initiatives aim to centralize citizen services in one platform, available 24/7.

4.2. Government-to-Business (G2B):

This involves delivering online services to the business community, including tax filing, company registration, and licensing. G2B services simplify procedures for small and medium-sized enterprises (SMEs), facilitate approvals, and enhance transparency in government-business interactions.

4.3. Government-to-Government (G2G):

This model covers electronic exchanges among government agencies, enhancing internal communication, information-sharing, and workflow efficiency. It serves as the backbone of e-government by promoting integration, coordination, and standardization across public institutions.

4.4. Government-to-Employee (G2E):

This model focuses on services for government employees, such as training, email, e-learning, and secure access to databases. G2E enhances internal efficiency and reduces administrative costs.

5. Requirements for Implementing E-Government

- Successful implementation of e-government necessitates several prerequisites that provide the essential infrastructure for this transformation (Lutfi, 2007, p. 6):
- Availability of advanced computer hardware and software applications supported by integrated ICT infrastructure.
- Accurate identification of government information, data, and forms to be digitized.
- Coordination among government agencies to avoid duplication and conflicts.
- Establishing multiple electronic payment systems (e.g., credit cards, utility bill add-ons).
- A legal framework regulating e-government transactions to safeguard citizens' rights and interests during the transition.
- Launching pilot projects requiring limited restructuring to ensure success before full-scale implementation.
- Continuous monitoring and evaluation of implementation outcomes with transparency.
- Training programs for government employees.
- Establishing an official government website for citizen inquiries and complaints.
- Public awareness campaigns about e-government services and how to use them.
- Political support and financial resources for the responsible implementation team.

Axis Three: Mechanisms of Transition to E-Government Management – Advantages and Challenges

The shift from traditional management to e-government does not occur suddenly or without preparation. Transitioning to e-government provides numerous benefits for both the government and citizens. However, adopting this new model is not without its drawbacks.

1. Stages of Transition to E-Government

There are several successive phases required for shifting from traditional administration to e-government, as follows:

1.1. Publication Stage:

This represents the birth stage, in which efforts focus on supporting, establishing, and developing the infrastructure of networks, equipment, and tools, in addition to publishing information through an online portal via the internet and government networks for members of society (Al-Sharif, 2010, pp. 74–75).

1.2. Interaction Stage:

This stage signifies the growth of data presentation across all government and private sectors. Information is exchanged with the public through websites, resulting in a fundamental transformation in procedures and the presentation of transaction processes and related forms.

1.3. Online Transaction Implementation Stage:

In this stage, services or transactions, or parts thereof, are executed electronically through the internet. This requires agreements with service providers to accept this method of completing transactions, issuing regulations to facilitate the process, and designing websites that include information pages on government services available online (Al-Ma'ani, Ahmed, Asmaa, & Nasser, 2011, pp. 117–118).

1.4. Integration of Government Services to Achieve E-Connectivity:

At this point, the government achieves interconnection among its entities through information exchange. Citizens and businesses can access services via a unified portal that brings together all ministries. Customers can conduct complete and secure transactions online after identity verification. The government's official portal at this stage provides secure access to all ministries and agencies, enabling citizens to reach services based on their needs and priorities. Most transactions are electronically processed through the site.

1.5. Fully Integrated E-Government:

At this advanced stage, the government provides all its services through a single website acting as a comprehensive portal that integrates services based on needs and functions rather than ministries. Institutional barriers are removed in favor of citizens. Individuals and businesses can view their records, manage accounts, and handle financial interactions with the government entirely online with confidence in data security and confidentiality. The government also invests in research, analysis, and public feedback to address shortcomings and further enhance its services (Al-Ma'ani, Ahmed, Asmaa, & Nasser, 2011, p. 118).

2. Advantages of E-Government

E-government is not an end in itself but rather a tool for achieving multiple benefits, including (Halima, 2018, pp. 172–173):

- ✓ Enhancing cooperation and information exchange between government institutions, thereby improving efficiency in achieving governmental objectives through seamless data flows.

- ✓ Saving time, effort, and money for all parties involved.
- ✓ Eliminating bureaucracy and mismanagement associated with traditional government structures by creating new rules, work environments, and efficient service delivery.
- ✓ Transforming from routine executive management to one characterized by innovation, research, planning, coordination, teamwork, productivity, transparency, and constant engagement with citizens.
- ✓ Reducing reliance on large central agencies and committees that consume resources without contributing to productivity.
- ✓ Optimizing the use of strategic resources.
- ✓ Developing communication activities
- ✓ Providing quantitative data to assist decision-makers.
- ✓ Promoting transparency by disclosing government policies and decision-making rationales.
- ✓ Reducing the costs of government services and processes.
- ✓ Facilitating global marketing of products and services.
- ✓ Strengthening inter-agency cooperation (Hossam & Khairbek, 2004, p. 124).

3. Challenges of Transition to E-Government

The transition to e-government faces multiple challenges, categorized as follows:

3.1. Legislative and Regulatory Challenges:

Providing services online requires a proper legal framework to ensure security, privacy, and trust. Without it, citizens may lose confidence if their data is compromised. Thus, specialized legislation is needed, drawing on international best practices (Al-Safi & Mohamed, 2021, p. 46).

3.2. Administrative Challenges:

Studies highlight several barriers, including:

- ➢ Weak planning and coordination at senior administrative levels.
- ➢ Failure to implement necessary organizational changes, such as restructuring departments and workflows.
- ➢ Lack of a clear strategic vision for ICT use.
- ➢ Dependence on outdated managerial methods.

- Resistance to change by employees fearing job insecurity.

3.3. Political Challenges:

The absence of coherent political planning or commitment can hinder adoption. The success of such a national project requires strong political will and support from the highest levels of government (Al-Safi & Mohamed, 2021, p. 47).

3.4. Financial and Technical Challenges:

These revolve around (Ashour, 2010, p. 32):

- High infrastructure costs.
- Limited financial resources for training and acquiring skilled ICT expertise.
- Weak financial allocations for system maintenance.
- Unequal access to internet services due to high usage costs.
- Multiple technical difficulties in ICT applications.

3.5. Human Challenges:

Key issues include:

- ✓ Widespread digital illiteracy in many developing countries.
- ✓ Lack of training and professional development for government employees.
- ✓ Poverty and low income levels limiting access to digital services.

Conclusion

E-government is a fundamental requirement for the digital economy, as it utilizes ICT to deliver public services more effectively. Its successful implementation requires significant resources to ensure quality service delivery and satisfactory performance levels. Nevertheless, obstacles such as digital illiteracy, weak infrastructure, and limited public awareness remain.

Study Findings

- The study reached the following key conclusions:
- Transitioning to the digital economy requires multiple enablers, including ICT, education, and research and development.

- E-government implementation requires sufficient infrastructure, internet access, computer availability, relevant legislation, and business process reengineering.

- E-government provides benefits such as enhanced inter-agency collaboration, economic development support, cost and time savings, and elimination of bureaucracy.

Acknowledgment

The author extends sincere appreciation to colleagues at the University of Algiers 3 for their constructive feedback during the preparation of this study, as well as to experts in digital governance and economics who provided valuable insights that enriched the research.

Conflict of Interest

The author declares no conflict of interest related to the publication of this article.

Recommendations

Based on these findings, the study proposes:

- Enhancing ICT infrastructure to accelerate the digital transition and ensure affordability while supporting R&D
- Enacting legislation to safeguard intellectual property, data security, and privacy.
- Investing in human capital development and eradicating digital illiteracy.
- Raising policymakers' awareness of e-government's role in transparency and citizen engagement.
- Promoting e-government projects through educational campaigns in schools, universities, and institutes.
- Learning from international e-government experiences.

References

1. Mohamed Alsaif. (2013). Factors Affecting Citizens' Adoption of E-Government Moderated by Socio-Cultural Values in Saudi Arabia (Ph.D. dissertation). College of Social Sciences, University of Birmingham, UK, p. 25.
2. Olivier Bomsel, & Leblanc Gilles. (1999). Qu'est-ce que l'économie numérique. France: CERNA.
3. Qarawi, Ahmed Al-Saghir, & Nadhir, Abdelrazzaq. (2005). The Role of E-Government in Achieving Governmental Performance Effectiveness. International Scientific Conference on Distinguished Performance of Organizations and Government (pp. 154–155). Ouargla, Algeria: University of Ouargla.
4. Al-Ma'ani, Ahmed, Oreiqat, Ahmed, Saleh, Asmaa, & Jarradat, Nasser. (2011). Contemporary Economic Issues. Jordan: Dar Wael for Publishing and Distribution.
5. Al-Saadi, Rijal, & Massai, Samir. (2013). Knowledge Economy and Change in the Business Environment.

Al-Hikma Journal of Economic Studies, Konooz Al-Hikma, (21)

6. Al-Mulhim, Hossam, & Khairbek, Ammar. (2004). Internet Networks: Infrastructure and Impact on Institutions. Damascus: Dar Al-Ridha Publishing.
7. Badran, Abbas. (2009). E-Government: From Strategy to Implementation. Beirut: The Arab Institution for Studies and Publishing.
8. Bazzaz, Halima. (2018). E-Government: A Presentation and Evaluation of the Bahraini E-Government Experience. Journal of Sharia and Economics, 7(1).
9. Hassan, Mudhaffar Al-Razu. (2006). Foundations of the Digital Economy and an Introduction to Internet Economics. Riyadh: Research Center.
10. Al-Rifa'i, Sahar Qadouri. (2009). E-Government and Means of Implementation. Journal of North African Economics, 7.
11. Al-Suwaifan, Abdulsalam Habes. (2011). Managing Security Positions through Electronic Means: An Applied Study on the General Traffic Department in Kuwait. Alexandria: New University House.
12. Ashour, Abdelkarim. (2010). The Role of E-Management in Rationalizing Public Service in the United States and Algeria (Master's thesis). Faculty of Law and Political Science, University of Mentouri, Constantine, Algeria.
13. Sakhri, Abdelwahab, & Mbareki, Safaa. (2022). The Role of E-Management Requirements in Enhancing Performance Quality: An Exploratory Study. Journal of Al-Mohtarif for Sports Sciences and Social and Human Sciences, 9(1)
14. Al-Sharif, Abda Nouman. (2010). E-Government as a Strategy for Restructuring the Role of the State and the Functions of Its Institutions: Reality and Challenges – A Study on the GCC. Ph.D. dissertation, Faculty of Economic Sciences, Commercial Sciences, and Management Sciences, University of Algiers 3, Algeria.
15. Lotfi, Ali. (2007). E-Government between Theory and Applied Practice. Sixth E-Government Conference, Dubai.
16. Al-Najjar, Farid. (2004). Investment in Electronic Systems and the Digital Economy. Alexandria: Shabab Al-Jami'a Publishing.
17. Ahmed, Mohamed Samir. (2009). E-Marketing (1st ed.). Amman: Dar Al-Maysara for Publishing and Distribution.
18. Al-Hidaya, Mohamed Nour, & Khalaf, Sanaa Joudat. (2008). E-Commerce. Jordan: Dar Al-Hamid for Publishing.
19. Najm, Aboud Najm. (2004). E-Management: Strategies, Functions, and Challenges. Saudi Arabia: Dar Al-Mareekh Publishing.
20. Al-Safi, Hisham Abdelsayed, & Mohamed, Badr Eddine. (2021). E-Government and the Digital Economy. Al-Mutala'a Al-Qanouniya, 3(2

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Pedagogical Strategies for Simplifying Arabic Grammar in al-Andalus: A Critical Analysis of al-Shaloubīn's Methodology in al-Tawṭi᾽a and Its Contribution to the Development of the Andalusian Grammatical Tradition

Research Schola

Ali Allouche

University of Oran 1

Algeria

E-mail: allouche77@yahoo.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords al-Shaloubīn; Simplification of Grammar; Methodology; al-Tawṭi᾽a; Pedagogy; Arabic Grammar

Abstract

After their conversion to Islam, the people of al-Andalus needed to learn the Arabic language and began seeking instructors who could teach them its grammatical rules. Students travelled to the East in pursuit of this knowledge and returned to their homeland, carrying the diverse approaches to grammar that were prevalent there. When Sībawayh's Kitāb reached al-Andalus, scholars devoted themselves to studying and memorizing it, taking responsibility for its teaching and explanation. However, during the process of instruction, grammarians perceived the difficulty of its rules, as well as its prolixity and complexity. Influenced by the idea of concise works in the East, they began to compose writings modelled on them. A succession of such abridged grammatical works followed, all aiming to facilitate and simplify grammar for learners, but these did not achieve wide acclaim. This continued until the appearance of al-Shaloubīn's al-Tawṭi᾽a, whose title indicates its methodology of making grammar more accessible and easier to comprehend. The study seeks to analyze the pedagogical and methodological strategies employed by al-Shaloubīn in al-Tawṭi᾽a, examining the extent to which they succeeded in reducing the complexity of Arabic grammar, and evaluating its contribution to the grammatical tradition of al-Andalus.

Citation. Allouche A. (2025). Pedagogical Strategies for Simplifying Arabic Grammar in al-Andalus: A Critical Analysis of al-Shaloubīn's Methodology in al-Tawṭi'a and Its Contribution to the Development of the Andalusian Grammatical Tradition. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 872–883. https://doi.org/10.56352/sei/8.11.68

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.03.2025	Accepted: 11.06.2025	Published: 13.09.2025 (available online)

Features of Simplification in *al-Tawṭi'a*:

1. **Introduction to the Book:**

2. **For his work,** Al-Shaloubīn chose a title that suggests simplicity and captures attention. The word *Tawṭi'a* conveys the sense of an introduction, a prelude, or a preparation for those who wish to study Arabic in greater detail. It is as if he is hinting to the learners that this composition is merely an introduction to the vast science of grammar, encouraging them to approach it. Should they wish to advance further, they must turn to more voluminous works. The verb *waṭṭa'a* means "to prepare" or "to pave the way." In *Lisān al-ʿArab*, it is stated that "*al-tawṭi'a* means preparation and facilitation."[1]

3. It is well known that authors usually provide introductions to their works before delving into the subject matter to acquaint the reader with the contents of their compositions. In truth, the choice of a book's title is an art that not every author masters because it influences the reader's perception, draws attention to the work, and leaves a sense of ease that facilitates its perusal. It also stimulates curiosity about what the book contains. This is precisely what Abū ʿAlī intended in naming his composition thus, as he aimed to encourage young learners in the study of grammar after observing their reluctance toward it. This, indeed, falls within the scope of simplification.

4. Method of Citing the Qur'ān, Hadith, Poetry, and Proverbs:

5. Abū ʿAlī al-Shaloubīn employed the well-known categories of exemplification. He cited Qur'ānic verses, Prophetic traditions, Arabic poetry, and proverbs. However, he handled such exemplars with a degree of wisdom so as not to allow them to become a source of grammatical complexity, as was the case in specific works where the exemplars themselves necessitated lengthy explanations. Instead, his citations served the purpose he aimed to achieve, as will be illustrated in the following points.

A – Citing Texts from the Qur'ān and Its Recitations:

The Qur'ān is considered one of the most important sources relied upon by grammarians in formulating the rules of Arabic grammar. Owing to the variety of its canonical and noncanonical (rare) recitations, grammarians found in it fertile ground to express their grammatical disagreements, particularly between the Basran and Kūfan schools. Kūfan grammarians exploited rare recitations and constructed grammatical rulings on the basis of them. In response, basran grammarians rejected these rulings by offering alternative interpretations of the recitations.[2]

The grammarians of al-Andalus paid great attention to the Qurʾān. It is not reported by any Andalusian grammarians that he rejected any of the rare Qurʾānic readings, hesitated to accept them, or dismissed them as authoritative evidence for establishing the rules of grammar, morphology, or phonetics. Indeed, a considerable number of seventh-century Andalusian grammarians cited rare readings extensively.[3] Abū ʿAlī al-Shaloubīn was one of those grammarians who cited the Qurʾān and its recitations, following the path of his teacher al-Suhailī, who "cited the established recitations, whether they were mutawātir (widely transmitted) or rare. "[4]

In his book *al-Tawṭiʾa*, Abū ʿAlī al-Shaloubīn cited approximately ninety Qurʾānic references, employing them to serve the intended purpose of facilitation and simplification by using them as foundational support for the rules presented. Examples demonstrating al-Shaloubīn's use of Qurʾānic citations to simplify and ease grammatical understanding, avoiding complicated derivations, include the following:

1. Al-Shaloubīn rejected the interpretation of the preposition *fī* (in) in the verse "*walāṣlabannakum fī judhūʿi annakhl*" (And We will crucify you upon the trunks of palm trees)[5] as meaning "on," without directly mentioning or addressing the opposing opinion. He stated, "The correct understanding is that *fī* here is to be taken in its usual sense, since the palm trunks are the place of crucifixion."[6] Similarly, regarding the preposition *ilā* in the verse, "*man anṣārī ilā llāh*" (From my supporters to God),[7] which many grammarians interpreted as meaning "with,"[8] al-Shaloubīn refused to depart from its original meaning. He argued that *ilā* is to be understood in its normal sense here, meaning the supporters are associating themselves "to" God, with the implied deletion indicated by the preposition *ilā*.[9]

Furthermore, he did not mention the opinion attributing a silent suffix *hāʾ* in the verse "*fa-bihudāhum iqtidhi*" (following their guidance).[10] Instead, he analysed the *hāʾ* as an absolute object.[11] In an approach intended to ease comprehension, most grammarians consider the *hāʾ* here to be silent and without a syntactic position.

The examples confirming al-Shaloubīn's rejection of the use of Qurʾānic citations as sources of complexity and disagreement among grammarians are numerous throughout *al-Tawṭiʾa*. His purpose in citing the Qurʾān was solely to facilitate understanding.

2- Limiting His Citations to Mentioning the Qurʾānic Verses without Explaining or Commenting the Them:

Al-Shaloubīn refrained from explaining the Qurʾānic verses, opting instead to simply mention the verse relevant to the grammatical point without presenting any opinions from supporters or opponents. He considered such commentary unhelpful, as it could confuse learners and detract from his primary objective of simplification. This approach is consistent throughout the entire book, except for one verse where he found that explanation would clarify the grammatical issue and facilitate the learner's understanding.[12]

3- Citing only the relevant part of the Verse:

The author of *al-Tawṭiʾa* did not cite all the Qurʾānic verses but limited himself to the specific segments necessary for the grammatical point. This practice aimed to spare the learner the difficulty of locating the full text of the citation, facilitate comprehension of the rule, and avoid overburdening the book with extensive Qurʾānic passages that might weigh down the reader. The purpose was always brevity, which is evident in most of the verses cited in the work. For example, when discussing relative pronouns, he quoted only part of the verse, stating: "The correct reading is that of those who read {*mā baʿūḍa*} in the nominative."[13] Similarly, when referring to the particle *bāʾ* that is superfluous in the subject, he cited the phrase: {*wakafā bi-llāhi ḥasībā*}.[14]

In the section on *naʿm* (good) and *biʾs* (bad), he cited part of the verse *n* and said: "What clarifies the implied pronoun in both is *mā*, the indefinite noun without specification, as in {*fa-naʿmmā hiya*}, meaning 'indeed, it is something good.'"[15]

4– Avoiding a detailed discussion of scholars' opinions on the verses cited:

Abū ʿAlī al-Shaloubīn refrained from presenting the opinions of grammarians regarding the Qurʾānic verses he cited in *al-Tawṭiʾa*. However, he did not adhere to this principle in some of his other works. For example, here, he limited himself to the citation by stating: "Among these is {*faʾṭallaʿa ilā ʾilāh mūsā*}, with *ilā* as a preposition governing the accusative, and there is no need to interpret (layyat) as equivalent to (laʿalla)."[16] In contrast, in his *Sharḥ al-Muqaddima al-Jazūliyya al-Kabīr*, he discussed al-Jazūlī's opinion on the matter and refuted it.[17]

5– Avoiding Citation of Rare Recitations:

Al-Shaloubīn was keen to avoid citing rare (shādhdh) Qurʾānic recitations, limiting himself to the mutawātir (widely transmitted) readings in his book *al-Tawṭiʾa*. He did not consistently apply this principle in his *Sharḥ al-Kabīr*. This approach forms part of his overall aim to facilitate learning for beginners. However, there are a few exceptions, such as the verse {*mā baʿūḍa*},[18] which he cited in the nominative case without mentioning that it is a rare reading.[19] This variant is attributed to al-Ḍaḥḥāk, Ibrāhīm ibn Abī ʿUbla, and Qaṭrab.[20]

If we consider his effort to exclude rare recitations from *al-Tawṭiʾa*, we find that in his *Sharḥ al-Kabīr*, he cited the verse {*qul rabb ḥukkim bil-ḥaqq*} with the reading that includes the *bāʾ* pronounced as a *dammah* (u).[21] Similarly, he cited the verse {*inna l-baqara tashābahat ʿalaynā*}[22] pronouncing the *hāʾ* in *tashābahat* with a *dammah*, stating: "*tashābahat ʿalaynā* is pronounced with *fatḥah* when masculine, and with *dammah* when feminine."[23] However, he omitted both verses in *al-Tawṭiʾa* to avoid mentioning disputed readings and confusing beginners. Thus, he effectively excluded rare Qurʾānic citations from complicating grammatical rules, instead using them as a means to facilitate grammar for novices.

B – Argumentation by Prophetic Hadith:

The use of prophetic hadith as supporting evidence differs among grammarians. Early grammarians rejected citing hadith, whereas later scholars—especially those of the Andalusian school—permitted it to the extent that it became one of their defining features.[24] Al-Shaloubīn was among the grammarians of this school; however, in *al-Tawṭiʾa*, he approached the matter with a cautious attitude. He did not reject citing hadith but limited its use, citing only three hadiths throughout the book. The first appeared in his discussion on the attachment of pronouns, where he said: "It is attached as in *ʾannaka*, *ʾannah*, and *kāna*, as in the hadith: 'Be Abū Khuthaymah, and be like him,' and its sisters."[25]

The second hadith was cited when discussing the subject and predicate, where he said: "As in the saying: 'The best words said by me and the prophets before me: There is no god but Allāh. '"[26] The third appeared in his treatment of the feminine, where he stated: "Or its description, as in: 'In every living being there is a reward.'"[27]

This indicates that al-Shaloubīn aimed in this book to avoid disputes among grammarians that tend to complicate grammatical rules for beginners.

C – Emphasis on Citing Arabic Poetry:

A reader of *al-Tawṭiʾa* will notice that its author frequently cited Arabic poetry, referencing ninety-eight complete verses and ten half-verses. When considered solely as citations of poetry by grammarians, al-Shaloubīn's use is moderate compared with others; for instance, Ibn Hishām's *Sharḥ Shudhūr al-Dhahab* contains two hundred and sixty verses. Even if we accept that the number of poetic citations in *al-Tawṭiʾa* is considerable, they all serve the purpose of simplification. Al-Shaloubīn employed these poetic examples solely as illustrations, never presenting a poetic citation before offering several easy syntactic examples. For example, he stated, "The conjunction *faʾ* (then) is invariably required with a nominal sentence whether it involves demand, as in 'If Zayd rises, then God forgives him,' or as in 'If

Zayd rises, then is ʿAmr standing?' or its negation, as in 'If Zayd rises, then ʿAmr is standing,' except when necessary, as in the verse:

Whoever does good deeds, God rewards them,

Moreover, evil for evil, with God, is equivalent.[28]

Elsewhere, he says: "A nominal or verbal sentence containing a pronoun referring back to the antecedent occurs, as in: 'Zayd came, he was laughing,' 'Zayd came laughing,' and 'Zayd came having laughed.' He emphasizes the connection in this construction with the conjunction *wāw*, as in 'Zayd came while he was laughing,' 'Zayd came laughing,' and the verse:

Who wielded swords without gentleness in their hands,

However, there were few slains when they were drawn.[29]

He did not cite the couplet except after illustrating simple, commonly used expressions among Arabs. Moreover, he only took from the couplet what was necessary, often limiting himself to half a line or part of a half-line, so as not to burden the reader with the entire verse, as in his citation of:

إمّا عرضت فبلّغا[30]

Very often, he rejected poetic citations, attributing them to irregularity or poetic necessity. Regarding irregular cases that are not subject to analogy, he stated, "If it is apparent, it occurs only in the general case with the generic definite article *al* or when annexed to what it is part of, as in '*naʿm al-rajul Zayd*' (Zayd is a good man) and '*naʿm ṣāḥib al-qawm ʿAmr*' (ʿAmr is a good companion of the people), and the verse:

فلنعم صاحب قوم لا سلاح لهم وصاحب الرّكب عثمان بن عفّانا

which is memorized but not subject to analogy. "[31]

Poetic necessity, on the other hand, he employed frequently, such as when citing it in his discussion of the light *ʾan* (*an*). He said, "As for necessity, it is permissible not to elaborate on the place of possibility, as in the verse:

"فلمّا رأى أن ثمّر الله ماله وأثّل موجودا وسدّ مفاقره[32]

When he discussed numbers and their annexation, he said, "They are annexed to *māʾa* (hundred), *miʾatayn* (two hundred), *alf* (thousand), and *alfayn* (two thousand), except in cases of necessity, as in the verse:

"إذا عاش الفتى مائتين عاما فقد ذهب المسرّة والفتاء[33]

At times, he called for the omission of irregular forms and their rejection, as he did with the expression "ʾakalūnī al-barāghīth" ("the fleas ate me"). He said, "The markers of the dual and the plural may be retained in irregular forms, as in the verse:

يلومونني في اشتراء النّخيــل اهلي فكلهم ألوم

and in the verse:

ألفيتا عيناك عند القفا أولى فأولى لك ذا واقيــه

which is the language of ''akalūnī al-barāghīth.' Its omission is more eloquent because the pronouns shift from their nominal origin to the prepositional."[34]

Despite the number of poetic citations, poetry is absent from many pages of the book, especially at the beginning, where no poetic examples appear from page 116 to page 136. It is also absent in several chapters, such as the chapter on knowledge, the chapter on emphasis, the chapter on substitution, and others. All of this is for the sake of facilitation and brevity.

D – Citing Arabic Proverbs:

Abū ʿAlī al-Shaloubīn cited only nine Arabic proverbs in his book *al-Tawṭi'a*, and his consistent goal was brevity and facilitation. Therefore, he introduced each proverb only after the grammatical issue was illustrated with syntactic examples, as he did with the Qur'ānic and poetic citations. For example, when discussing the conditions for beginning with an indefinite noun, he said: "Among these is generality in wording and meaning, as in 'كلّ أحد يفعل هذا' (everyone does this), and his statement: 'ثمرة خير من جرادة' (a fruit is better than a locust)."[35]

He clarified the proverb if he found it difficult for the learner, saying: "Among these is when the expression has the meaning of another expression that does not affect its meaning, the noun being indefinite in it, as in: شرّ أهرّ ذا ناب and شيء ما جاء بك إلى مخّ عرقوب, meaning: 'Nothing but evil gnawed this tooth,' and 'Nothing but something came to the sole of ʿUrqūb's foot.'"[36]

Sometimes, he mentioned the proverb without commenting on it, as in his discussion of *tarikhm* (emphatic pronunciation), where he said: "When you pause, the *hā'* is usually pronounced lightly, but it is emphatically pronounced in the *murakhkham* (feminine emphatic), when it is open and connected, as in *'aṭraqa Karā*."[37] He did not frequently cite proverbs in *al-Tawṭi'a*, aiming instead for ease and simplification.

1– Arrangement of Grammatical Topics

Al-Shaloubīn arranged the topics in his book following a method suited to the educational goal of the work. He began with the parts of speech and their components and then moved to distinguish between inflected (*mu'rab*) and uninflected (*mabnī*) forms since Arabic is a language of inflexion. He proceeded with other grammatical chapters, ensuring coherence between connected topics. For example, the chapter on the subject and predicate is followed by the chapter on *kāna* and its sisters, and the chapter on *'in* and its sisters is followed by the chapter on opening and breaking the hamzah of *'in*. In contrast, the verb chapter with triliteral verbal nouns is followed by the *nūnī* verbal noun chapter—which resembles the approach of modern textbooks.

2– Style and Distinctiveness in Presenting the Material and Language of the Book:

The author presented the grammatical material in *al-Tawṭi'a* in a straightforward style, resembling that of an expert teacher. This is unsurprising given his over fifty years of experience teaching Arabic. He gives a clear title to each chapter and then defines, if needed, followed by an easy explanation supported by clear syntactic examples. Occasionally, he includes various linguistic evidence, avoiding overly technical grammatical language mixed with logic. As a result, the language of the book is straightforward and requires little further explanation or clarification; those wishing for confirmation can consult the book directly.

3– Abundance of clear, simple syntactic examples:

A striking feature of *al-Tawṭi'a* is the abundance of simple, clear examples resembling a modern school textbook. This exemplification serves to establish grammatical rules for learners firmly. These examples often precede linguistic citations such as Qur'ānic verses and Arabic poetry. For example, when discussing the pronoun referring back to a noun, he said, "If a noun is mentioned followed by a verb or a noun acting as a verb, and its pronoun or pronoun

substitutes are raised, whether directly or indirectly, the first noun must be nominative at the start, as in: *Zaydun qāma, Zaydun kufiya bihi, Zaydun qāma bihi abhūhu, Zaydun kufiya bi-abīhi,* as well as *Zaydun ḍuriba, Zaydun dhahaba bihi, Zaydun ḍuriba ʾakhūhu, Zaydun dhahaba bi-abīhi.*"[38]

1– Concise Without Deficiency, Avoidance of Redundancy:

Brevity is the primary feature reflecting facilitation in *al-Tawṭiʾa*. The book is concise without compromising grammatical rules, including most of the topics needed by beginner learners. This characteristic appears in several aspects outlined in the following points:

A – Book Length:

The various grammatical chapters are presented in a small volume of no more than two hundred and thirty (230) pages and are easily and concisely delivered. This compact size is encouraging for students of grammar, as it offers material that is easy to approach and memorize, unlike larger books that may intimidate learners and discourage their interest.

B – Concise Presentation of Topics:

Al-Shaloubīn worked to present various grammatical topics succinctly. Most chapters do not exceed two or three pages, such as the chapters on adjectives, emphasis, substitution, *naʿm* and *biʾs*, and others. Some topics are treated in just a few lines, unlike in other books, where they cover many pages. For example, the subject with the object is presented in *al-Tawṭiʾa* in five pages,[39] whereas it is covered alone in ten pages in his *Sharḥ al-Muqaddima al-Jazūliyya*.[40] The chapter on the subject and predicate is about five pages in *al-Tawṭiʾa*[41] However, it extends to eighteen pages in the *Sharḥ al-Kabīr*.[42] This conciseness in grammatical topics serves the purpose of ease and facilitation.

C – Omission of Nonessential Matters in the Grammatical Chapter:

Al-Shaloubīn omitted topics that are not important for beginners—those that learners can do without at the early stages. He focused on the most essential aspects of each topic and left out what he deemed unnecessary for novices. For example, when discussing the subject (*fāʿil*), he did not address its omission, whether permissible or obligatory, nor did he discuss its placement before or after other elements. He also avoided explaining the reason (*ʿillah*) for the subject's nominative case, although he covered all of these in *Sharḥ al-Kabīr*. As for the chapter on dispute (*tanāzuʿ*), which involved many disagreements between Basran and Kūfan grammarians, Abū ʿAlī discussed it simply and easily on just one page.[43] without mentioning any grammarians' opinions.

7– Avoidance of forced interpretation:

The author of *al-Tawṭiʾa* avoided forced or strained interpretations in his book, approaching the Qurʾānic and poetic evidence with a literalist mindset rather than engaging in the grammarians' interpretive disputes. For example, he rejected the Basran grammarians' interpretation of the accusative case of the word فأطّلع in the verses:

لعلّي أبلغ الأسباب أسباب السماوات فأطّلع إلى إله موسى

وإّني لأظنّه كاذبا وكذلك زيّن لفرعون سوء عمله وصدّ عن السّبيل وما كيد فرعون إلا في تباب.[44]

He stated that "*faʾṭallaʿa* is in the accusative case, and it does not need to be understood in the sense of 'layta' (would that)," a simplification aimed at making grammar easier for learners.

8– Use of the Dialogue Style:

Because the purpose of writing *al-Tawṭiʾa* is education and facilitation, its author was required to use a style that attracted learners to the material, especially since they had become discouraged due to books that complicated grammar with logic, excessive explanations, and lengthiness. He chose to rely on a dialogue style, as if teaching without a teacher. Throughout many pages of the book, he imagines someone asking him questions, to which he responds, or he addresses the reader directly. His use of dialogue terms indicates this, such as "*Alā tarā*" (Do you not see?) in: "*Nahu: yaqūmu Zayd in qāma ʿAmr, alā narā anna al-ʿArab innamā taqūlu: ʾanta ẓālim in faʿalta, wa-lā taqūl: in tafʿal.*"[45] Moreover, "*taqūlu*" (you say) directs the address, as in "*wa-taqūlu: man yaqim aqim maʿahu*" (and you say: whoever stands, stand with him).[46] Alternatively, "*qawluka*" (your saying) in "*ka-qawlika: hādhā qāḍin*" (like your saying: This is a judge).[47] In addition, "*fa-kaʾannaka qult: al-khubzah ʾakaltuhā, thumma qult: ʾiyyāhu ʾakaltu, wa-qawluka: thulthu al-khubzah ʾakaltuhā, mumtaniʿ, liʿadam al-ʿāʾid ʿalā al-mubtadāʾ*," meaning:

"It is as if you said: 'I ate the bread,' then said: 'I ate it,' and your saying: 'You ate a third of the bread' is impossible because it does not refer back to the subject. "[48]

Conclusion

al-Tawṭiʾa is among the concise books that contributed to facilitating Arabic grammar and gained popularity among Andalusian scholars. All translators of al-Shaloubīn mentioned this work, noting its distinguished method in citing the Qurʾān, hadith, and poetry; its coherent arrangement of grammatical topics; its clear presentation style; its abundance of simple syntactic examples; its conciseness and avoidance of redundancy; its avoidance of forced interpretation; and its use of the dialogue style.

Acknowledgment

The author would like to thank the Department of Arabic Language and Literature at the University of Oran 1 for providing access to scholarly resources, as well as colleagues who offered valuable feedback on earlier drafts of this research.

Conflict of Interest

The author declares no conflict of interest regarding the publication of this article.

References

1. ʿAbd al-ʿĀ, S. M. (1978). Athar al-qirāʾāt al-qurʾāniyya fī al-dirāsāt al-naḥwiyya [The Impact of Qurʾanic Readings on Grammatical Studies]. Kuwait: ʿAlī Jurāḥ al-Ṣabāḥ Foundation.
2. Abū Ḥayyān al-Andalusī, M. ibn Y. al-Shāhid. (1993). Tafsīr al-Baḥr al-Muḥīṭ [Exegesis of the Encompassing Ocean] (ʿĀ A. ʿAbd al-Mawjūd & ʿA. M. Muʿawwaḍ, Eds.). Beirut: Dār al-Kutub al-ʿIlmiyya. (1st ed., 1413 AH).
3. Abū Ḥayyān al-Andalusī. (1984). Irtishāf al-ḍarb min lisān al-ʿarab [Absorbing the Strike from the Tongue of the Arabs] (M. A. al-Nammās, Ed.). Cairo: Maṭbaʿat al-Nashr al-Dhahabī. (1st ed., 1404 AH).
4. Abū Ḥayyān al-Gharnāṭī. (n.d.). Al-Baḥr al-Muḥīṭ [The Encompassing Ocean]. (Classical Arabic source).
5. Al-Anbārī, K. al-D. A. al-B. ʿA. al-R. ibn M. ibn Abī Saʿīd. (n.d.). Al-Iṭḥāf fī masāʾil al-khilāf bayna al-naḥwiyyīn al-baṣriyyīn wa-al-kūfiyyīn [The Gift on the Disputed Issues between the Basran and Kufan Grammarians] (M. al-D. ʿAbd al-Ḥamīd, Ed.). Cairo: Dār al-Ṭalāʾiʿ.
6. Al-ʿAskarī, A. H. (1988). Jamhara al-amthāl [Compendium of Proverbs] (M. A. al-F. Ibrāhīm & ʿA. al-M. Qiṭmāsh, Eds., 2nd ed.). Beirut: Dār al-Jīl. (1408 AH).

7. Al-Haytī, ʿA. al-Q. R. (1993). Khaṣāʾiṣ madhhab al-Andalus al-naḥwī khilāl al-qarn al-sābiʿ al-hijrī [Characteristics of the Andalusian Grammatical School during the 7th Century AH]. Benghazi: University of Qār Yūnus. (1st ed.).
8. Al-Jazūliyya, I. (n.d.). Al-ʿUlūm al-Tajwīdiyya fī Sharḥ al-Muqaddima al-Jazūliyya [The sciences of Tajwīd in the commentary on the Jazūliyya Introduction]. (Classical Arabic source).
9. Al-Maydānī, A. A. I. (1987). Majmaʿ al-amthāl [The Collection of Proverbs] (M. A. al-F. Ibrāhīm, Ed., 2nd ed.). Beirut: Dār al-Jīl. (1408 AH).
10. Al-Nābigha al-Dhubyānī. (2005). Dīwān al-Nābigha al-Dhubyānī [Collected Poems of al-Nābigha al-Dhubyānī] (Ḥ. Ṭamās, Ed., 2nd ed.). Beirut: Dār al-Maʿrifa. (1426 AH).
11. Al-Nawawī. (1987). Ṣaḥīḥ Muslim bi-sharḥ al-Nawawī [Ṣaḥīḥ Muslim with al-Nawawī's Commentary] (1st ed.). Beirut: Dār al-Kitāb al-ʿArabī. (1407 AH).
12. Al-Sakkākī, A. Y. (n.d.). Miftāḥ al-ʿUlūm [The Key to the Sciences]. (Classical Arabic source).
13. Al-Shalūbīn, A. ʿA. (1981). Al-Tawṭiʾa [The Introduction] (Y. A. al-Muṭawwiʿ, Ed., 2nd ed.). Cairo: al-Maktaba al-Markaziyya. (1401 AH).
14. Al-Shalūbīn, A. ʿU. M. ibn ʿU. (1994). Sharḥ al-Muqaddima al-Jazūliyya al-kabīr [Major Commentary on al-Jazūlī's Introduction] (T. ibn S. ibn N. al-ʿUtaybī, Ed., 2nd ed.). Beirut: Muʾassasat al-Risāla. (1414 AH).
15. Anonymous. (2014). Notes on Warsh: Complete. Cape Town: Al-Tanzil. Retrieved from https://al-tanzil.co.za/wp-content/uploads/2014/08/Notes-on-Warsh-complete.pdf
16. Anonymous. (2017). Riwayah of Hafs and Warsh recitation methods: A comparative study. Pertanika Journal of Social Sciences & Humanities, 25(S), 137–148. Retrieved from https://www.pertanika.upm.edu.my
17. Anonymous. (2022). The history of the spread of Riwayah Warsh. Direct Research Journal of Social Science and Educational Studies, 10(11), 271–279. Retrieved from https://directresearchpublisher.org
18. Anonymous. (n.d.). Al-Munīr fī al-Qirāʾāt al-ʿAshr [The Illuminated Book on the Ten Qirāʾāt]. (Classical Arabic source).
19. Anonymous. (n.d.). Tajweed rules of Riwayat Warsh 'an Nāfiʿ [PDF]. Retrieved from https://archive.org/download/UsoolWARSHanNafiTajweedRulesForWarsh
20. Bewley, A. A. (2000). The seven Qirāʾāt of the Qurʾān. London: Dar al-Taqwa.
21. Ḍayf, Sh. (n.d.). Taysīr al-naḥw al-taʿlīmī qadīman wa-ḥadīthan maʿ nahj tajdīdih [Facilitating Educational Grammar in Ancient and Modern Times with a Method for Its Renewal]. Cairo: Dār al-Maʿārif.
22. Ibn Ajurrum. (n.d.). Al-Ajurrumiyya [Introductory Grammar Treatise]. (Classical Arabic source).
23. Ibn Jinnī, A. al-F. ʿU. (1986). Al-Muḥtasib fī tabyīn wujūh shudhūdh al-qirāʾāt wa-al-iḍāḥ ʿanhā [The Accountant: On Clarifying the Peculiarities of Qurʾanic Readings and Explaining Them] (ʿA. al-N. Nāṣif & ʿA. I. Shalabīn, Eds., 2nd ed.). Ṭāʾif, Saudi Arabia: Iḥyāʾ al-Turāth, Department of Islamic Studies, College of Education, Umm al-Qurā University. (1406 AH).
24. Ibn Manẓūr. (n.d.). Lisān al-ʿArab [The Tongue of the Arabs] (ʿA. ʿA. al-Kabīr, M. A. Ḥasb Allāh, & H. M. al-Shādhilī, Eds.). Cairo: Dār al-Maʿārif.
25. Jeffery, A. (1937). Materials for the history of the text of the Qurʾān: The old codices. Leiden: E. J. Brill.
26. Mālik ibn Anas. (2005). Al-Muwaṭṭaʾ [The Muwattaʾ] (Narrated by Yaḥyā ibn Yaḥyā al-Laythī al-Andalusī; Ṣ. J. al-ʿAṭṭār, Ed. & Annot., 4th ed.). Beirut: Dār al-Fikr. (1425 AH).
27. Nasrat, R. (2021). Let's learn Riwayat Warsh. Cairo: Self-published. Retrieved from https://www.scribd.com/document/519428951/Let-s-learn-Riwayat-Warsh
28. Nasser, S. (2012). The transmission of the variant readings of the Qurʾān: The problem of tawātur and the emergence of shādhdh. Leiden: E. J. Brill.
29. Van Putten, M. (2022). Quranic Arabic: From its Hijazi beginnings to its classical reading traditions. Leiden: E. J. Brill.
30. Versteegh, K. (1993). Arabic grammar and Qurʾānic exegesis in early Islam. Leiden: E. J. Brill.
31. Wuld Abāh, M. al-M. (2008). Tārīkh al-naḥw al-ʿarabī fī al-mashriq wa-al-maghrib [History of Arabic Grammar in the East and the West] (2nd ed.). Beirut: Dār al-Kutub al-ʿIlmiyya. (1429 AH).

Bibliography:

[1] Ibn Manẓūr, Lisān al-ʿArab, ed. ʿAbdullāh ʿAlī al-Kabīr, Muḥammad Ḥasb Allāh, and Hāshim Muḥammad al-Shādhilī (Cairo: Dār al-Maʿārif, n.d.), under the entries (w-ṭ-ʾ).

[2] ʿAbd al-ʿĀl Sālim Makram, Athar al-Qirāʾāt al-Qurʾāniyya fī al-Dirāsāt al-Naḥwiyya (Kuwait: Muʾassasat Jurāḥ al-Ṣabāḥ, 2nd ed., 1978), 57–63.

[3] ʿAbd al-Qādir Raḥīm al-Haytī, Khaṣāʾiṣ Madhhab al-Andalus al-Naḥwī Khilāl al-Qarn al-Sābiʿ al-Hijrī (Benghazi: Jāmiʿat Qār Yūnus, 1st ed., 1993), 150.

[4] Muḥammad al-Mukhtār Wuld Abāh, Tārīkh al-Naḥw al-ʿArabī fī al-Mashriq wa-al-Maghrib (Beirut: Dār al-Kutub al-ʿIlmiyya, 2nd ed., 1429 AH/2008), 244.

[5] Qurʾān, Sūrah Ṭāhā 20:41, complete verse: ولأصلبنكم في جوع النخل ولتعلمنّ أيّنا أشدّ عذابا وأبقى.

[6] Abū ʿAlī al-Shalūbīn, Al-Tawṭiʾa, ed. Yūsuf Aḥmad al-Muṭawwiʿ (Cairo: al-Maktaba al-Markaziyya, 2nd ed., 1401 AH/1981), 245.

[7] Qurʾān, Sūrah al-Ṣaff 61:14, complete verse: وقال الحواريون نحن أنصار الله فآمنت طائفة من بني إسرائيل وكفرت طائفة فأيدنا الذين آمنوا على عدوهم فأصبحوا ظاهرين.

[8] Abū Ḥayyān al-Andalusī, Irtishāf al-Ḍarb min Lisān al-ʿArab, ed. Muṣṭafā Aḥmad al-Nammās (Cairo: Maṭbaʿat al-Sitr al-Dhahabī, 11th ed., 1404 AH/1984), vol. 3, 1730–31.

[9] Abū ʿAlī al-Shalūbīn, Al-Tawṭiʾa, 244.

[10] Qurʾān, Sūrah al-Anʿām 6:90, complete verse: قل لا أسألكم عليه أجرا إن هو إلا ذكرى للعالمين.

[11] Abū ʿAlī al-Shalūbīn, Al-Tawṭiʾa, 186.

[12] Abū ʿAlī al-Shalūbīn, Al-Tawṭiʾa, 314; commentary on Qurʾān 54:12: وفجّرنا الأرض عيونا فالتقى الماء على أمر قد قدر.

[13] Abū ʿAlī al-Shalūbīn, Al-Tawṭiʾa, 174; Qurʾān 2:26, complete verse: إنّ الله لا يستحي أن يضرب مثلا ما بعوضة فما فوقها فأما الذين آمنوا فيعلمون أنه الحق من ربّهم وأما الذين كفروا فيقولون ماذا أراد الله بهذا مثلا يضلّ به كثيرا ويهدي به كثيرا وما يضل به إلا الفاسقين.

[14] Abū ʿAlī al-Shalūbīn, Al-Tawṭiʾa, 247; Qurʾān 4:6.

[15] Abū ʿAlī al-Shalūbīn, Al-Tawṭiʾa, 274; Qurʾān 2:271, complete verse: إن تبدوا الصدقات فنعمّا هي وإن تخفوها وتؤتوها الفقراء فهو خير لكم ويكفّر عنكم من سيئاتكم والله بما تعملون خبير.

[16] Abū ʿAlī al-Shalūbīn, Al-Tawṭiʾa, 141; Qurʾān 40:37, complete verse: وإنّي لأظنّه كاذبا وكذلك زيّن لفرعون سوء عمله وصدّ عن السبيل وما كيد فرعون إلا في تباب.

[17] Abū ʿAlī al-Shalūbīn, Sharḥ al-Muqaddima al-Jazūliyya al-Kabīr, ed. Turki ibn Suhū ibn Nazzāl al-ʿUtaybī (Beirut: Muʾassasat al-Risāla, 2nd ed., 1414 AH/1994), vol. 2, 466–67.

[18] Qurʾān 2:26, complete verse: فما فوقها فأمّا الذين آمنوا فيعلمون أنه الحق من ربهم وأمّا الذين كفروا فيقولون.

[19] Abū ʿAlī al-Shalūbīn, Sharḥ al-Muqaddima al-Jazūliyya al-Kabīr, vol. 2, 608.

[20] Abū Ḥayyān al-Andalusī, Tafsīr al-Baḥr al-Muḥīṭ, ed. ʿĀdil Aḥmad ʿAbd al-Mawjūd and ʿAlī Muḥammad Muʿawwaḍ (Beirut: Dār al-Kutub al-ʿIlmiyya, 1st ed., 1413 AH/1993), vol. 1, 267.

[21] Sharḥ al-Muqaddima al-Jazūliyya al-Kabīr by al-Shalūbīn, vol. 2, 845; Qurʾān, Sūrah al-Anbiyāʾ 21:112, complete verse: وربّنا الرحمن المستعان على ما تصفون; see also Al-Muntakhab fī Tabyīn Wujūh Shudhudh al-Qirāʾāt wa-al-Iḍāḥ ʿanhā by Ibn Jinnī, ed. ʿAlī al-Najdī and ʿAbd al-Fattāḥ Ismāʿīl Shalabī (Ṭāʾif, Saudi Arabia: Iḥyāʾ al-Turāth, Department of Islamic Studies, College of Education, Umm al-Qurā University, 2nd ed., 1406 AH), vol. 2, 69.

[22] Qurʾān, Sūrah al-Baqarah 2:70, complete verse: وإنا إن شاء الله لمهتدون, a rare recitation attributed to al-Ḥasan ibn Saʿīd al-Muṭawwaʿī; see Tafsīr al-Baḥr al-Muḥīṭ by Abū Ḥayyān al-Andalusī, vol. 1, 69.

[23] Sharḥ al-Muqaddima al-Jazūliyya by al-Shalūbīn, vol. 3, 937.

[24] See ʿAbd al-Qādir al-Haytī, Khaṣāʾiṣ Madhhab al-Andalus al-Naḥwī Khilāl al-Qarn al-Sābiʿ al-Hijrī, 157.

[25] Al-Tawṭiʾa by al-Shalūbīn, 185; and the variant narration in Ṣaḥīḥ Muslim regarding the repentance of Kaʿb ibn Mālik, where the Prophet Muhammad (peace be upon him) saw a man with a pale face because of mirage and said, "Be Abū Khuthaymah," who was then Abū Khuthaymah al-Anṣārī (Ṣaḥīḥ Muslim, vol. 17, 89–90).

[26] Al-Tawṭiʾa by al-Shalūbīn, 218; and the ḥadīth in Muwattaʾ Mālik, vol. 1, Book of Hajj, 422, stating: "The best supplication is the supplication on the Day of ʿArafah, and the best words I and the prophets before me have said is: 'There is no god but Allāh alone, with no partner.'"

[27] Same, 338; and ḥadīth in Ṣaḥīḥ Muslim, vol. 14, 242, where the Prophet said: "They asked, 'O Messenger of Allāh, do we have a reward for these animals?' He said: 'There is a reward for every moist liver.'"

[28] Al-Tawṭiʾa by al-Shalūbīn, 152; and the verse by ʿAbd al-Raḥmān ibn Ḥassān ibn Thābit in Khizānat al-ʾAdab by al-Baghdādī, vol. 2, 365.

[29] Al-Tawṭiʾa by al-Shalūbīn, 214; a verse attributed to al-Farazdaq in Al-Inṣāf fī Masāʾil al-Khilāf by al-Anbārī, vol. 2, 196; not found in al-Farazdaq's Dīwān.

[30] Same, 153; and a verse by ʿAbd Yaghūth ibn Waqāṣ in Khizānat al-ʾAdab by al-Baghdādī, vol. 1, 413, complete:
فيا راكبا إمّا عرضت فبلّغن نداماي من نجران أن لا تلاقيا.

[31] Al-Tawṭiʾa by al-Shalūbīn, 272; and a poem by Kāthir ibn ʿAbdullāh al-Hashlī in Khizānat al-ʾAdab by al-Baghdādī, vol. 9, 415–18.

[32] Al-Tawṭiʾa by al-Shalūbīn, 235; and a poem by al-Nābigha al-Dhubyānī in his Dīwān, 63.

[33] Same, 281; and a poem by al-Rabīʿ ibn Ḍabʿ al-Fazarī in Khizānat al-ʾAdab by al-Baghdādī, vol. 7, 379–80.

[34] Al-Tawṭiʾa by al-Shalūbīn, 164; the first poem by ʾUmyah ibn Abī al-Ṣalt in his Dīwān, 129; the second by ʿUmar ibn Malqaṭ al-Ṭāʾī in Khizānat al-ʾAdab by al-Baghdādī, vol. 9, 21.

[35] Same, 216; and a proverb of ʿUmar ibn al-Khaṭṭāb in Muwattaʾ Mālik, Book of Hajj, 416.

[36] Al-Tawṭiʾa by al-Shalūbīn, 216–217; the first proverb in Majmaʿ al-Amthāl by al-Maydānī, vol. 2, 172; the second in Jamhara al-Amthāl by Abū Hilāl al-ʿAskarī, vol. 1, 549, with a variant narration: sharr mā ajāk ilā makhat ʿUrqūb.

[37] Same, 294; proverb in Majmaʿ al-Amthāl by al-Maydānī, vol. 2, 285; full proverb: (al-aṭrāf karā yaḥlib laka), used to describe the fool who wishes for falsehood and believes it.

[38] Al-Tawṭiʾa by al-Shalūbīn, 221.

[39] See Al-Tawṭiʾa by al-Shalūbīn, 161–66.

[40] See Sharḥ al-Muqaddima al-Jazūliyya al-Kabīr by al-Shalūbīn, vol. 1, 237–88.

[41] See Al-Tawṭi'a by al-Shalūbīn, 216–20.
[42] See Sharḥ al-Muqaddima al-Jazūliyya al-Kabīr by al-Shalūbīn, vol. 2, 741–58.
[43] See Al-Tawṭi'a by al-Shalūbīn, 276.
[44] Qur'ān, Sūrah Ghāfir 40:36–37.
[45] Al-Tawṭi'a by al-Shalūbīn, 141.
[46] Al-Tawṭi'a by al-Shalūbīn, 152.
[47] Same, 154.
[48] Al-Tawṭi'a by al-Shalūbīn, 202.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Rhetorical Contributions of Mokhtar Nouiouat: Comparative Perspectives on Arabic Rhetoric in Light of Contemporary French and Arabic Traditions

Raki Larbi
Research Scholar
Yahia Farès University of Médéa, Research Laboratory for Terminology and Lexicography
Algeria
E-mail: raki.larbi@univ-medea.dz

Seghier Salem
Research Scholar
Yahia Farès University of Médéa
Algeria
Email: seghir.salem@univ-medea.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Mokhtar Nouiouat; rhetorical studies; comparative rhetoric; truth and metaphor; rhetorical terminology

Abstract

Comparative studies represent one of the most dynamic fields within the humanities, particularly in linguistics, literature, and rhetoric. They serve as a fertile ground for the interaction of languages, cultures, and intellectual traditions, producing innovative perspectives that enrich scientific inquiry and cultural understanding. Such studies not only highlight the degrees of relatedness among languages but also illuminate similarities and differences in rhetorical practices and linguistic structures. They further contribute to resolving interpretative problems that may remain obscure within the confines of a single language, while also advancing pedagogy, critical thinking, and cross-linguistic comprehension.

This article explores the rhetorical efforts of Mokhtar Nouiouat, a prominent scholar whose work bridges Arabic rhetorical traditions with French rhetorical thought. The study addresses key research questions: What is Nouiouat's contribution to Arabic rhetorical studies? At what level do his insights manifest their significance? How have comparative approaches shaped the development of Arabic rhetorical thought?

In pursuing these questions, two central aspects of Nouiouat's contributions are emphasized:
1. His development of rhetorical terminology and the methodological approaches to its formulation.
2. His rhetorical perspectives and their intellectual value within the broader field of Arabic rhetorical studies.

Methodologically, this research adopts a descriptive approach, employing systematic analysis of Nouiouat's writings

to evaluate their impact. The findings underscore Nouiouat's role in enriching Arabic rhetorical scholarship, particularly by engaging with French traditions in ways that broadened conceptual horizons and fostered new approaches to metaphor, truth, and rhetorical analysis.

Citation. Larbi R., Salem S. (2025). The Rhetorical Contributions of Mokhtar Nouiouat: Comparative Perspectives on Arabic Rhetoric in Light of Contemporary French and Arabic Traditions. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 884–899. https://doi.org/10.56352/sei/8.11.69

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 21.01.2025 | Accepted: 08.08.2025 | Published: 13.09.2025 (available online)

Introduction

In their trajectory toward development and renewal, the sciences tend to follow two methods or pathways: the path of reflection, contemplation, and deep thought, and the path of being influenced by other sciences, whether of a similar nature or somewhat distant. In either case, sciences, whether closely related or more remote, possess inevitable connections dictated by the laws of growth, advancement, and refinement. This seems to be a nearly universal principle across sciences and societies, so long as language, in its broadest sense, remains a unifying factor. The history of Algeria is rich with scholars who authored works across diverse fields and excelled in numerous sciences. Among them were those prolific in their writings and those who composed but little, those who expanded and explained and those who abridged, figures well known and many others all but forgotten. In this article, I address one of the eminent modern scholars of rhetoric who held a significant place and left a notable impact on rhetorical studies. This article is entitled *"The Rhetorical Efforts of Mokhtar Nouiouat: A Reading in His Book Arabic Rhetoric in Light of Contemporary Rhetorical Approaches between French and Arabic Traditions"*.

Rhetoric, as one of the sciences of Arabic, consists of three interrelated arts. This interconnection may be conceived by considering the principal elements actively shaping the rhetorical process: the speaker, the recipient, and the text. The speaker, who generates discourse, must convey a meaning to a particular addressee. This obliges adherence to the system and conventions of language in constructing structures and selecting words that convey the intended meaning, thereby achieving the desired purpose and intended effect. It likewise involves the choice of stylistic patterns that weave together this linguistic construction, shaping its architecture in various ways: some about content and meaning, others to form, and still others to the recipient of the discourse.

The consideration of such dimensions accords rhetoric as a distinguished position within Arabic sciences and elevates it to a high rank. Rhetoric thus operates as the indispensable tool of any speaker wishing to direct a discourse or message. As has been said, rhetoric manifests in many rhetorics; for the standpoint from which a writer proceeds, it determines the conception, purpose, and fruit of rhetoric. On this point, Mokhtar Nouiouat observes that "Western rhetoric was dominated by the theory of art for art's sake. The Greek or Roman poet or writer sought beauty of expression, whereas the Arab poet or writer, in his artistic prose, sought creativity and the enchantment of eloquence."[1]

The principle of "beautiful expression", long adopted by the West, both in antiquity and in modernity, what they referred to as "art for art's sake", differs fundamentally from what ancient Arabs termed "the enchantment of eloquence." Among these two terms lies a vast gulf in both meaning and force. However, through a particular form of

[1] Mokhtar Nouiouat, *Arabic Rhetoric in Light of Contemporary Rhetorical Approaches between French and Arabic Traditions* (Algiers: Houma Publishing and Printing House, 2013), 18.

interpretation, one might establish common ground that allows for a measure of coexistence and convergence. Nonetheless, the evident distinction remains that the Arabic term "the enchantment of eloquence" derives its potency from its capacity for impact and clarity of expression, an eloquence that cannot exist without the presence of additional factors touching multiple aspects of discourse, regardless of its form or genre. In this context, attention was given to the recipient, who constitutes an integral part of the communicative process, as well as to the message itself, how it is delivered and how it is received. All of these elements converge within the domain of rhetoric.

The strength of rhetoric flows from the strength of its sources, from which it is drawn and upon which it is built. Arabs had a profound passion for the Arabic language, its beauty, and its refined aesthetics. For them, the word was the voice of their existence; indeed, it was the very essence of their lives. When the Noble Qurʾān was revealed, they were overawed by it, captivated by its eloquence and by its unrivalled inimitability. They were likewise enthralled by poetry, its splendour of expression, and the power of its composition. Such realities inspired Mokhtar Nouiouat to note: "The sources of Greek rhetoric are epics, theatres, and mythology, whereas the sources of Arabic rhetoric are the Noble Qurʾān, the Prophetic traditions, and pre-Islamic, Umayyad, and Abbasid poetry. Its evidentiary examples are the noble verse from the Qurʾān, the noble prophetic saying, and the poetic line, or couplet, uttered by a poet that astonishes the ear, penetrates the heart, transcends borders as it travels through lands, and thus endures, immortalising both itself and its author."[2]

From this perspective, it may be deduced that the greater the strength of the sources of rhetoric, the greater its standing and the more profound its impact on recipients. This phenomenon was evident in classical Arabic poetry, whose verses travelled far and wide across tribes, regions, and nations. Their renown grew to an extraordinary degree, securing for them an enduring perpetuity, the *Muʿallaqāt*, for instance. These compositions were safeguarded through the diligent preservation of tongues, committed faithfully to memory, and encircled by minds and intellects striving to grasp the subtle meanings concealed within their words and structures.

The question of meaning and expression has long preoccupied Arab and Western, ancient and modern, critics and rhetoricians, who are divided into differing schools and factions over the matter. Some privileged meaning places it above expression, given that meaning precedes expression in conception; words are but representations of the meanings that reside within the mind.[3] These abstract entities require embodiment if they are to be grasped by the intellect through the senses.

Mokhtar Nouiouat devoted the first section of his book to metaphor and its types, a section that follows the pattern established by the ancients when they debated whether literal and figurative usage pertains to expression or to meaning. Notably, Nouiouat treated the word as the counterpart of the idea and ideas as the counterparts of words. For him, "ideas are born of the reasoning mind, and the expression of an idea or of ideas can only come through speech composed of words arranged according to a particular linguistic standard."[4] Moreover, the idea that takes form in the mind as a conception of some matter can only be realised through expression, whether orally or in writing. It is language and writing that embody the image of the idea. This duality of *ideas*–Saussurean inspires word thought, for Saussure established dualities such as *langue–parole* and *signifier–signified* as the point of departure for his linguistic studies. Nouiouat's view of the idea does not depart from the conception already articulated by the ancients: "Whether sensory or abstract, the idea is never without complexity, owing to the particularities that distinguish it in quality, class,

[2] Ibid., 18.

[3] ʿAbd al-Qāhir al-Jurjānī privileges meaning over expression in his words: "Expressions are the servants of meanings." See *Asrār al-Balāgha*, ed. and annotated by Maḥmūd Muḥammad Shākir (Cairo: Maṭbaʿat al-Madanī, 1991), 8. In contrast, al-Jāḥiẓ elevates expression above meaning, declaring: "Meanings are strewn in the streets, known to both the foreigner and the Arab, the Bedouin and the townsman. What truly matters is the proper measure, the choice of words, the ease of utterance, abundance of fluency, sound instinct, and excellence of composition. For indeed, poetry is a craft, a form of weaving, and a kind of representation." See Abū ʿUthmān al-Jāḥiẓ, *Kitāb al-Ḥayawān*, ed. ʿAbd al-Salām Muḥammad Hārūn (Cairo: Muṣṭafā al-Bābī al-Ḥalabī, 1965), 2nd ed., vol. 3, 131–32.

[4] Mokhtar Nouiouat, *Arabic Rhetoric in Light of Contemporary Rhetorical Approaches between French and Arabic Traditions* (Algiers: Houma Publishing, 2013), 21.

type, and related aspects."[5] Thus, the idea is that which revolves in the mind as a conception of a given matter, corresponding to what is described as the signified, the conception, or the mental image.

In this work, our focus is on the following levels:

1. The Level of Terminology

Terminology serves as the key to the sciences; it is the very foundation through which the researcher enters the city of knowledge. Attention to terminology is not a recent development but rather as old as the sciences themselves. It emerges alongside them, sometimes slightly before and sometimes after, and has received remarkable attention from scholars and specialists in every discipline that has arisen across the ages. This is due to its vital role in elucidating scientific issues, expounding upon their questions, examining their complexities and particularities, and addressing the challenges that present themselves to researchers from time to time.

The study of terminology may be considered from two perspectives:

Origin:

A term is marked by a set of characteristics and features that must be taken seriously. In establishing or formulating a term, two qualities are needed: simplicity, smoothness of use, precision, and clarity of meaning. The closer the secondary meanings of a term remain to its primary linguistic sense, the more readily the mind comprehends it and grasps its significance. In such cases, the reader or researcher finds it easier to perceive the intended concept through recourse to the linguistic meaning. Conversely, whenever a term's meaning diverges too far from its linguistic origin, its understanding becomes clouded with ambiguity and subject to confusion.

Thus, in the coinage of new terminology, the original linguistic sense remains proximate, shifting only slightly through processes such as addition, qualification, or figurative usage. For example, the term *uṣūl* (principles) retains its original form but changes with the addition of specification, as in *uṣūl al-naḥw* (principles of grammar) or *uṣūl al-fiqh* (principles of jurisprudence).

Situation:

Concepts must be formulated for a term in such a way as to be comprehensive and exclusive, avoiding confusion with other terms. A term should be distinguished from others that share its form but differ in meaning. The more a term's specific concept does not overlap with those of other disciplines, the better; this independence and uniqueness make the science clearly delineated and its principles evident. Borrowing terms should only occur when no alternatives remain. Terms confined to a single science more precisely express their intended meanings, whereas frequent use across multiple disciplines leads to conceptual instability, broad semantic scope, and potential overlap with one another. Such overlapping necessitates decisive measures to separate them, aligning each term with its particular field, which is achieved through specification and qualification.

This article reviews a set of rhetorical terms in which naming and, occasionally, conceptual differences have arisen between Arabic and French linguistic traditions. It considers Mokhtar Nouiouat's position on these terms, how he addressed them by finding Arabic equivalents, and the examples he provided to arrive at Arabic terminology or approximate equivalences between Western and French concepts, including new concepts he developed following comparative analysis of Arabic and French examples.

1. Allegorical Metaphor (Al-Majāz al-Mursal):

[5] Ibid., 21–22.

Allegory stands in opposition to literal truth; the latter is the foundation, and allegory its derivative. Allegory involves transforming a truth into a metaphor by a contextual indication that prevents the expression of the truth itself. Arabic scholars unanimously agree that allegory can be divided into two types: allegorical metaphor and simile. An allegorical metaphor is every metaphor that is not bound by a relation of similarity.

Specifically, a simple allegorical metaphor is a word deliberately used in a sense other than its original meaning, with an indication that the literal meaning is not intended.[6] This distinguishes it from metaphor and similarity. The intention behind using the term in a nonliteral sense by the speaker forms the basis of differentiation between truth and allegory; without this, truth and allegory would be indistinguishable.

"Allegory consists of not using the word according to its original meaning for which it was coined, but rather in surpassing that original meaning to another meaning that suits it. This suitability between the original meaning and the allegorical meaning legitimises the use of the allegorical meaning of the word. This correlation between the two meanings is called the relationship, which may be similar."[7]

Mokhtar Nouiouat referred to allegorical metaphor as "relation metaphors" (majāz al-ʿalāqa), a term commonly used by some scholars of tafsīr and jurisprudence. However, classical Arabic rhetoricians do not employ this designation; instead, they name it *al-majāz al-mursal* (allegorical metaphor). This figure of speech is founded upon relationships other than similarity, which is specific to simile and metaphor and different from the relation of necessity that characterises *kināya* (metonymy). Among the classical scholars who mentioned this term are, for example, but not limited to the following:

- Abū al-ʿAbbās Shihāb al-Dīn Aḥmad ibn Idrīs ibn ʿAbd al-Raḥmān al-Mālikī, known as al-Qurāfī (d. 684 AH), author of *Al-Furūq (Anwār al-Burūq fī Anwāʾ al-Furūq)*.

- Abū al-ʿAbbās Shihāb al-Dīn Aḥmad ibn Yūsuf ibn ʿAbd al-Dāʾim, known as al-Samīn al-Ḥalabī (d. 756 AH), author of *ʿUmdat al-Ḥuffāẓ fī Tafsīr Ashraf al-Alfāẓ*.

- Abū Ḥafṣ Sirāj al-Dīn ʿUmar ibn ʿAlī ibn ʿĀdil al-Ḥanbalī al-Dimashqī al-Numānī (d. 775 AH), author of *Al-Libāb fī ʿUlūm al-Kitāb*.

- Abū ʿAbdullāh Badr al-Dīn Muḥammad ibn ʿAbdullāh ibn Bahādir al-Zarkashī (d. 794 AH), author of *Al-Baḥr al-Muḥīṭ fī Uṣūl al-Fiqh*.

Following this, we contend that the concept shared between the two terms (*al-majāz al-mursal* and *majāz al-ʿalāqa*) is identical, although the term *al-majāz al-mursal* is more precise and accurate. This is because it distinguishes itself from allegories found in metaphor, simile, and metonymy, which are governed by relationships of similarity. Conversely, the term "relation metaphor" is broader and inclusive of all cases. If one wants to distinguish metaphor and simile, one says that the metaphor's relation is similar, whereas the "relation metaphor" remains unrestricted until differentiation is made. If the relationship is other than similarity, it is termed *al-majāz al-mursal*. It is called "mursal" (sent without restriction) because it is not confined to a single relationship, as a metaphor is, but encompasses several kinds of relationships.[8]

The widespread use of the term *al-majāz al-mursal* (allegorical metaphor) instead of *majāz al-ʿalāqa* (relation metaphor) confirms the precision of the former, even though it is fundamentally based on the relationship between two

[6] Aḥmad ibn Ibrāhīm ibn Muṣṭafā al-Hāshimī, *Jawāhir al-Balāgha fī al-Maʿānī wa al-Bayān wa al-Badīʿ*, ed. Yūsuf al-Ṣumaylī (Beirut: al-Maktaba al-ʿAsriyya), 252.
[7] Muḥammad ʿAlī Sulṭānī, *Al-Mukhtār min ʿUlūm al-Balāgha wa al-ʿArūḍ* (Damascus: Dār al-ʿIsmāʾ, 2008), 98.
[8] Ibid., 117.

entities. Mokhtar Nouiouat defines *al-majāz al-mursal* or relation-based metaphor as follows: "Relation metaphor lies in naming a thing by a name other than the one assigned to it; that is, giving something the name of another with which it shares a relationship."[9]

The concept of relationship is broader, encompassing similarity and other ties, thus including metaphor, simile, and *al-majāz al-mursal* alike, as all depend on a relationship between two parties (the literal and the figurative). The relationships identified by Nouiouat do not depart from those outlined by classical scholars, and we present here the relationships that the early Arab rhetoricians established for *al-majāz al-mursal*, along with their examples.

The partial relationship is exemplified in the saying of Allah the Exalted: "[And every person, We have fastened to him his fate upon his neck, and We will produce for him on the Day of Resurrection a record which he will find spread open.]" (Al-Isrāʾ 17:13). Originally, the neck was designated for the necklace, collar, or fetter. The Qurʾānic usages are precise; where submission, humility, abasement, meekness, and obedience are intended, the word *ʿunuq* (neck) is used.

Conversely, *jīd* (nape/throat) is employed when referring to beauty, grace, and adornment, following the Arabs' customary use. Allah says: "[In her neck is a twisted rope of palm fibre.]" (Al-Masad 111:5). Here, *jīd* refers to the neck of a woman but is used in a context distinct from submission or obedience.

The Arabs employ this distinction in their speech; the poet ʿAntara ibn Shaddād al-ʿAbsī (from *Al-Kāmil*) says:

The stage of the Arameans in the valley of the sanctuary,

Is there within you one who grieves, departs and returns?

On the right side of the world lies a lesson of landmarks,

By which my skin weakened and my endurance vanished.

From every enchanting beauty whose neck turns,

Playful as the gambolling of a graceful young gazelle.

Here, metaphor is used because life and death are connected with it. When death is intended, the phrase "his neck was cut" is employed, and when free life is meant, the phrase "liberation of the neck" is used. When captives are humiliated, they are bound by the neck. Allah says, "[When the shackles are placed upon their necks and the chains; they are dragged.]" (Ghafir 40:71).

Al-Ḥarīrī, in *Al-Maqāma al-Bakrīya*, when speaking about a woman, states, "Although she is the tender one who soothes, the ambitious who destroys, she is the binding fetter of lice and a wound that never heals!"[10] This is a metaphor by contextual indication, as the captive's suffering is increased by captivity, as he is bound and wears ragged clothing infested with lice, thus amplifying his hardship.

The poet says:

"And if she swore, her oath would never be broken

[9] Mokhtar Nouiouat, *Arabic Rhetoric in Light of Contemporary Rhetorical Approaches between French and Arabic Traditions* (Algiers: Dar Houma Publishing, 2013), 27.
[10] Abū Muḥammad al-Qāsim ibn ʿAlī al-Ḥarīrī, *Al-Maqāmāt al-Adabiyya* (Beirut: Maṭbaʿat al-Maʿārif, 1873), 462.

The 'darkened fingertips' have no oath."

“Darkened fingertips” is a metaphor based on a part-whole relation, referring to the palm. The fingertips are parts of the hand, so the whole is expressed by naming a part due to this partial relationship.

- Its total relationship, which is the opposite of the partial one, as in Allah’s saying: “[They put their fingers in their ears.]” (Nūḥ 71:7), where *fingers* refer to the fingertips.

- Its circumstantial relationship: “[And He it is Who made the night a covering for you, and sleep a rest, and made the day to rise up again.]” (Al-Furqān 25:47). Here, the time is named by what occurs within it by virtue of a circumstantial relation, since human actions take place in its time.

- Its local relationship: It mentions the place but implicitly refers to the circumstance. For example, the poet says:

- "Indeed, although the enemy's covenant be aged,

- Hatred remains hidden within the breasts."

- Here, *in the breasts* is the place, but the intended meaning is *in the heart*, because the heart’s seat is the breast. Allah says, “[Have they not travelled through the land so that they might have hearts with which to understand or ears with which to hear? Indeed, it is not the eyes that are blinded but rather the hearts that are within the breasts.]” (Al-Ḥajj 22:46) and “[And what is concealed within the breasts has been made evident.]” (Al-ʿĀdiyāt 100:10).

- Its current relationship.

- It is an instrumental relationship.

- Relationship of what is to be.

- Relationship of what was.

The terminology coined by Mokhtar Nouiouat differs little from that of classical Arab rhetoricians. It is as follows: causal metaphor; instrumental metaphor; effected metaphor; circumstantial metaphor; local metaphor; characteristic or emblematic metaphor; sensory metaphor; metaphor of the master, guardian, or owner; and metaphor of the thing.

Metaphors of Number (Synecdoche of Number):

Mokhtar Nouiouat defines it as follows: “It is the expression of the plural by the singular or the singular by the plural. For the former, one might say *al-insān* (the human), *al-ghaniyy* (the rich), *al-faqīr* (the poor), *al-ʿArabī* (the Arab), *al-ʿAjamī* (the non-Arab), *al-fāḍil* (the virtuous), *al-ṣāliḥ* (the righteous) among the servants, *al-ʿālim* (the learned), and *al-jāhil* (the ignorant), intending all those to whom any of these names or attributes apply. For the latter, one might say *les Descartes*, *les Spinozas*, *les Louis XIV*, *les Louis XVI*... while only intending those who bear one of these names.”[11]

[11] Mokhtar Nouiouat, *Arabic Rhetoric in Light of Contemporary Rhetorical Approaches between French and Arabic Traditions*, 37–38.

This type of metaphor exists in Arabic and occurs frequently in the Noble Qurʾān. Ibn Fāris devoted a chapter entitled "The chapter on the singular meant to indicate the plural," stating that "One of the Arabs' habits is to mention the singular intending the whole."[12]

Among its evidence is Allah's saying: "[He said, 'These are my guests, so do not disgrace me.']" (Al-Ḥijr 15:68), and His saying: "[If you both repent to Allah, then your hearts have indeed inclined. However, if you support each other against him, then indeed, Allah is his protector, and Gabriel and the righteous believers and the angels thereafter are supporters." (Al-Tahrīm 66:4), and His saying: "[For indeed, they are an enemy to me, except the Lord of the worlds.]" (Ash-Shuʿarāʾ 26:77), and His saying: "[Throw every obstinate disbeliever into Hell.]" (Qāf 50:24).

A subtlety of this usage is that the singular and plural may appear in the same expression, so one should not presume that only the singular, dual, or plural is intended but rather all of these. This usage is limited to specific expressions and cannot be generalised. For example, it is correct to say *hāʾulāʾ umma* (these are a nation), *hādhā umma* (this is a nation), and *humā umma* (these two are a nation) but not *hādhā rajul* (this is a man) or *hāʾulāʾ rajul* (these are men) or *humā rajul* (these two are men). Ibn Fāris says, "Ranks in numbers are three: the rank of the singular, the rank of the dual, and the rank of the plural. These correspond to unity, duality, and plurality; they do not conflict in reality. To refer to a singular by a plural term or a dual by a plural term is metaphor."[13]

Mokhtar Nouiouat holds that this type corresponds in Arabic to the use of the singular for the plural or dual when the relationship between them is one necessity. He illustrates this with the following verse: "[They swear by Allah for your sake to please you, but Allah and His Messenger deserve to be pleased if they are believers.]" (At-Tawba 9:62). Obedience to the Messenger (peace upon him) is regarded as obedience to Allah. In many verses, obedience to Allah is linked with obedience to His Messenger. The pronoun in *li-yarḍū-hu* (to please Him) refers to the nearer antecedent, which is the Messenger (peace upon him). On the other hand, the oath sworn by the disbelievers by Allah is directed at the believers and the Messenger. Allah is fully aware of what is in the breasts of disbelievers and is independent of them and their oath.

Metaphor of Material (Synecdoche of Matter):

A distinct feature of Arabic, although rare in other languages, is that the name of an object often indicates a quality or an action that becomes its characteristic due to prevalence, as seen in terms of *al-Fattāḥ* (the Opener) and *al-Tawwāb* (the Accepter of Repentance). Nicknames and epithets, such as *Abū Ṭurāb* (Father of Dust), a kunyah of ʿAlī ibn Abī Ṭālib (may God be pleased with him), are closely related to this category. However, this particular kunyah has a specific original story, and it is important to distinguish between a person called *Abū Ṭurāb* simply as one created from dust and someone called *Abū Ṭurāb* as ʿAlī was when the Prophet (peace be upon him) found him sleeping in the mosque. As Sahl ibn Saʿd narrated, the Prophet entered upon Fāṭima and asked, "Where is your cousin?" She said, "There was some conversation between us, and he has gone out." The Prophet then went out and found him sleeping in the shade of the mosque wall with his garment fallen. The Prophet shook the dust from his body and said to him, "O Abū Ṭurāb, rise! O Abū Ṭurāb, rise!" Sahl said, "There was no name more beloved to ʿAlī than to be called by it."[14]

[12] Aḥmad ibn Fāris ibn Zakariyyāʾ al-Qazwīnī al-Rāzī al-Ṣāḥibī, *Fiqh al-Lugha al-ʿArabiyya wa Masāʾiluhā wa Sunan al-ʿArab fī Kalāmahā*, ed. ʿUmar Fārūq al-Ṭibāʿ (Beirut: Maktabat al-Maʿārif, 1993), 216.

[13] Ibid., 195.

[14] Abū Bishr Muḥammad ibn Aḥmad ibn Ḥammād ibn Saʿīd ibn Muslim al-Anṣārī al-Dawlabi al-Rāzī, *Al-Kunā wa al-Asmāʾ*, ed. Abū Qutayba Naẓar Muḥammad al-Fāryābī (Beirut: Dār Ibn Ḥazm, 2000), vol. 1, 21.

This example does not fall into the category of metaphor described by Mokhtar Nouiouat by drawing an analogy with what exists in French.

Mokhtar Nouiouat defines this type of metaphor as "the metaphor in which one expresses the thing by its material."[15] That is, by the material from which it is made. He exemplifies it in French and Arabic by *al-silāḥ* (fer, iron) for weapon and *al-riša* (feather) for pen, and so forth.

He added, "Some modern researchers consider this type of metaphor closer to *catachresis* (arbitrary or improper usage) than to art requiring refined taste."[16]

Indeed, such a metaphor can lead to ambiguity. For example, if one says, "So-and-So pointed with an iron," it may be understood that he carried a sword, a dagger, or a knife. Alternatively, it might be understood as indicating a rod of iron or something similar to iron. If everything made of iron were simply called "iron," this would be inappropriate, just as in human names: each individual has a specific name (Zayd, ʿAmr, Khālid...), and each is rightly called a human. It is not appropriate to call all previously mentioned individuals merely "human," as this would cause confusion and restrict clarity for the user. This is because such a term is either an attribute or a generic collective or singular name; for instance, "angels" is the plural of "angel" and a singular generic noun, yet each angel has an individual name such as Jibrīl, Mikāʾīl, and ʿAzrāʾīl. These names refer to specific entities.

These classifications differ from those established by classical Arab rhetoricians. It is evident from Mokhtar Nouiouat's book that the French language and its rhetoric influence him. On this basis, Nouiouat introduced many rhetorical terms into Arabic rhetoric through translation. Many of the rhetorical terms he used differ from the classical Arabic rhetorical terminology.

We present some of these terms and compare their Arabic and French equivalents to highlight the differences between them:

- The metaphor of the thing
- Metaphors of the master, guardian, and owner
- Sensory metaphor
- Metaphors of a characteristic or emblem
- Historical allusion
- Mythical allusion
- Sufficiency – abrupt cessation

Additionally, Nouiouat designates another category of metaphor as *majāzāt al-ishtimāl* (Synecdoches), a term he borrows from Greek. He defines it as follows: "Synecdoches consist in naming something by the name of another with which it forms a group or a whole, whether tangible or intangible, such that the existence of the first is inherently or conceptually bound to the existence of the second. On this basis, a word or phrase indicates a broader or narrower meaning than its original meaning does, generally indicating broader meaning when narrower meaning is used and

[15] Mokhtar Nouiouat, *Arabic Rhetoric in Light of Contemporary Rhetorical Approaches between French and Arabic Traditions* (Algiers: Dar Houma Publishing, 2013), 37.
[16] Ibid., 37.

narrower meaning when broader meaning is used. Synecdoche can thus be defined as the use of the more for the less and the less for the more."[17]

From this definition, it can be inferred that it largely aligns with the definitions set by classical Arabic rhetoricians. For example, the metaphor based on an instrumental relationship corresponds to what Nouiouat calls the metaphor of material (*synecdoque de la matière*). According to him, the metaphor of material "is the metaphor in which one expresses the thing by its material,"[18] referring to the material from which it is made. Nouiouat provides the following examples:

Arabic	French
weapon	fer (iron)
horn	airain (bronze)
jewellery	or (gold)
skin	Taureau (bull)
fabric	castor (beaver)

In these examples and others, this type often involves using the whole for the part. For example, when he exemplifies *al-rīsha* (feather) for the pen and *al-ʿūd* (wood) for the instrument, he illustrates either the part representing the whole or the whole representing the part. The pen is made from feathers and reeds, materials from which it is constructed, just as instruments are named after the materials or parts that compose them.

This is also evident in the Qurʾānic verse: "[The month of Ramadān] is that in which was revealed the Qurʾān, a guidance for the people and clear proofs of guidance and criterion. So whoever sights [the new moon of] the month, let him fast it..." (Al-Baqarah 2:185). This is metaphorical; the original meaning is "whoever sights the crescent moon." The crescent is the instrument for the month, and the verse expresses the instrument by what it produces and signals. The one who sights is the crescent moon, which signifies the arrival and departure of the month; thus, the instrument stands for its indication.

Notably, the French examples cited by Nouiouat differ from the examples employed by classical Arab rhetoricians. The cause of this difference lies in usage: in Arabic, it is correct to say that "I held the pen" and "I held the pen's feather" are not metaphorical because Arabs traditionally wrote with a feather considered the pen itself since the pen was taken from the feather. To consider it metaphorical, there must be agreement between speaker and addressee for the expression to be accepted as correct.

Returning to the concept of expressing the less by the more and vice versa, in Arabic, one says, "I drank seawater," although one does not literally mean all of it, but only some part. The contextual and rational indication prevents the statement from being taken literally, as it is not logically acceptable for a person to drink the entire seawater; instead, they drink a part of it. The use of plural forms to denote an unspecified large part is a case of *majāz mursal* (metaphor by circumstantial indication).

[17] Mokhtar Nouiouat, *Arabic Rhetoric in Light of Contemporary Rhetorical Approaches between French and Arabic Traditions* (Algiers: Dar Houma Publishing, 2013), 35

[18] Mokhtar Nouiouat, *Arabic Rhetoric in Light of Contemporary Rhetorical Approaches between French and Arabic Traditions* (Algiers: Dar Houma Publishing, 2013), 36.

2. Augmentation (Al-Ziyāda):

Initially, this is a morphological term related to word structure. Words in Arabic are generally triliteral in terms of their root letters. By adding certain letters, those considered augmentative, as seen in *saʾaltumūnihā* or *hawāyat al-simān*, one obtains quadriliteral, quinqueliteral, or hexaliteral forms. These additions to the root letters carry semantic significance, adding layers of meaning to the word and thus to the sentence. Hence, augmentation in morphology generates meaning.

At the sentence level, additions to the sentence structure lead to an increase in meaning. Arab linguists and rhetoricians generate meaning through various devices, including the following:

- Restriction (taqsīr)
- Specification of the predicate and subject
- Equivalence
- Elaboration (iṭnāb)
- Redundancy (ḥashw)
- Repetition
- Emphasis

Rhetoricians employ their own methods to generate, multiply, and develop meanings. Amplification refers to variations in meanings caused by factors such as word order, the addition of one or more words, or augmentation at the level of letters or sentence structure. The goal of all of this is to achieve an increase in meaning, intensity, clarity, or rhetorical impact.

1. Particles of Meaning (ḥurūf al-maʿānī):

Particles of meaning are those letters that carry meaning when combined with others, in contrast to the letters of the alphabet (ḥurūf al-hijāʾ), which bear no inherent meaning. They are the components that constitute a word. For example, in the word *ḥaṣala* (he obtained), the letters of the alphabet are ḥāʾ, ṣād, and lām.

Examples of particles of meaning include interrogative particles and their various forms. For instance, the hamzah in Allah's saying: "[Their messengers said, 'Is there doubt about Allah, Creator of the heavens and the earth? He invites you to forgive you of your sins and delay you to a specified term.' They said, 'You are only human like us, and you want to turn us away from that which our fathers worshiped, so bring us a clear authority.']" (Ibrāhīm 14:10). The interrogative particle here adds the meanings of rebuke, negation, and denunciation.

Al-Fakhr al-Rāzī commented, "The first question His saying 'Is there doubt about Allah?' is an interrogative in the form of denial. After mentioning this meaning, he followed it with a sign indicating the existence of the creator, the chosen one. This is His saying: 'Creator of the heavens and the earth.' We have previously mentioned in this book how the existence of the heavens and the earth indicates the need for a chosen, wise creator repeatedly and fully, so we do not repeat it here."[19]

[19] Fakhr al-Dīn al-Rāzī, *Mafātīḥ al-Ghayb or Al-Tafsīr al-Kabīr*, 3rd ed. (Beirut: Dār Iḥyāʾ al-Turāth al-ʿArabī, 1420 AH), vol. 19, 70.

Had the interrogative hamzah not entered this verse, these meanings would not have been understood in this manner. Such meanings can be discerned in other ways through differences in syntactic arrangement, such as through advancement and delay, addition and omission of words, etc.

Al-Ṣāḥibī, in his work *Fiqh al-Lugha* and *Sunan al-ʿArab*, includes a chapter entitled "The Chapter on Additions to Nouns," in which he states: "Among the customs of the Arabs is the addition of letters to nouns, which may be for exaggeration or for distortion and disparagement. I heard a trustworthy person say that the Arabs do this for distortion. They say for something far away, excessively distant, between the two extremes, *ṭirimāḥ*; its original form is *ṭarḥ*, which means distant. However, when it became excessively long, it was called *ṭirimāḥ*, whereby the name was distorted as the image was distorted. This is not a baseless statement."[20]

These additions differ from morphological augmentations in Arabic, although they are studied within that field. They pertain in *Fiqh al-Lugha* to meaning. Morphological additions address word structure and the impact of changing patterns on meaning and meaning generation, which is a particular feature of Arabic and is not subject to analogy but rather preserved distinctly. Examples include:

Original	Meaning	Distorted Form	Explanation
al-Ṭarḥ (الطرح)	distant	Ṭirmāḥ (طرماح)	The distant between two extremes, excessively long
al-Raʿsh (الرعش)	tremor	Raʿshan (رعشن)	The one who trembles
Khalb (خلب)		Khalbān (خلبن)	Strong claws
Zarq (زرق)		Zarqam (زرقم)	Deep blue
Ṣalad (صلد)		Ṣaladum (صلدم)	A strong she-camel
Shadaq (شدق)		Shadaqam (شدقم)	Wide jaw
al-Tasammuʿ (التَّسَمُّع)		Simʿanna (سِمْعَنَّة)	Al-Ṣāḥib ibn ʿAbbād said: "A woman who listens to all who speak and watches them"[21]
(Much listening)			
al-Tanẓur (التَّنَظُّر)		Naẓranna - Nuẓranna (نِظْرَنَّة - نُظْرُنَّة)	Much looking and insight

2. Word Addition (Ziyādat al-Kalimāt):

Grammarians state that a sentence consists of a predicate and a subject (al-mubtada' and al-khabar, or a verb with its doer). Anything beyond this is considered *faḍalāt* (excess), that is, surplus words that can usually be omitted. These additions exceed the essentials to add detailed or additional meanings that clarify the sentence from specific

[20] Aḥmad ibn Fāris ibn Zakariyyāʾ al-Qazwīnī al-Rāzī al-Ṣāḥibī, *Fiqh al-Lugha al-ʿArabiyya wa Masāʾiluhā wa Sunan al-ʿArab fī Kalāmahā*, ed. Muḥammad ʿAlī Bayḍūn (Beirut: Muʾassasat al-Risāla, 1997), 62.
[21] Ismāʿīl ibn ʿAbbād al-Ṣāḥib, *Al-Muḥīṭ fī al-Lugha, Kāfī al-Kifāʾa*, ed. Muḥammad Ḥasan Āl Yāsīn (Beirut: ʿĀlam al-Kutub, 1994), vol. 1, 378.

perspectives related to the action, such as direction, beginning, and ending, or related to the noun, such as adjectives, annexations, circumstantial qualifiers, specifications, and so forth. Modern linguists call these additions *mukammilāt* or supplements, as they increase meanings according to necessity. These *faḍalāt* can be categorised as follows:

- Semiphrases (prepositional phrases and adverbs of time and place)
- Circumstantial clauses (al-ḥāl)
- Specification (al-tamyīz)
- Object complements of types *bi* (with), *lahu* (for him), absolute object (*muṭlaq*), accompanying phrases (*maʿahu*)
- Emphasis (both verbal and semantic)

These *faḍalāt* add new meanings to the sentence. Rhetoricians have devoted a chapter in their works entitled "States of the Subject and Predicate," addressing various aspects, such as omission and mention, definiteness and indefiniteness, advancement and delay.[22]

Mokhtar Nouiouat prefers the term *istizāda* (استزادة, meaning "augmentation" or "increase") instead of *ziyāda* (الزيادة) to distinguish it clearly from the morphological concept of *ḥurūf al-ziyāda* (letters of augmentation) in Arabic grammar. This distinction is helpful because it prevents confusion between the terminologies used in different linguistic sciences.

3. Using one Form as a Substitute for another:

Scholars of Arabic linguistics have observed that this type of usage is widely practiced in Arabic, particularly in Arabic poetry, speeches, and similar genres. The Qurʾān, revealed in pure Arabic, follows the linguistic patterns spoken by Arabs but enhances their beauty, precision, and eloquence. Ibn Fāris, in his work *Al-Ṣāḥibī fī Fiqh al-Lugha al-ʿArabiyya wa Masāʾiluhā wa Sunan al-ʿArab fī Kalāmahā*, addresses this type extensively under various topics, such as the following:

- Names given to individuals on the basis of proximity or cause.
- Terms function as names, although they are actually epithets or titles.

Moreover, other matters that require lengthy discussion. This form of substitution contributes richly to the nuances and flexibility of Arabic expression.

An example from the Qurʾān is the verse: "[He said, 'I will take refuge on a mountain that will protect me from the water.' He said, 'No protector today from the decree of Allah except for one whom He has mercy on.' The wave came between them, and he was among the drowned.]" (Hūd 11:43).

[22] Muḥammad ibn ʿAbd al-Raḥmān ibn ʿUmar, *Al-Iḍāḥ fī ʿUlūm al-Balāgha*, ed. Muḥammad ʿAbd al-Munʿim Khafājī (Beirut: Al-Sharikah al-ʿĀlamiyyah lil-Kitāb, 1989), vol. 1, 109.

The word *ʿāṣim* (protector) here means *al-maʿṣūm* (the protected). The active participle (ism al-fāʿil) is used where one would expect the passive participle (ism al-mafʿūl). This is similar to the phrase: "[He will be in a pleasant life.]" (Al-Qāriʿa 101:7), where *rāḍiya* (pleased) is used in the sense of *marḍiyya* (pleasing). Life itself does not experience pleasure; rather, it is the person who enjoys it.

In the verse, *ʿāṣim* appears to mean "preventer" or "protector", and *yasṭim* means "he prevents" from drowning. The context shows that protection from drowning is only for those on whom Allah has mercy. Allah is the authentic protector (*al-ʿāṣim*), whereas Prophet Nūḥ's people and his son are the intended drowned because of their lack of faith. The original phrasing might have been "no one is protected from Allah's decree except whom He has mercy on." However, since Nūḥ's son was doomed to drown, the active participle is used, referring to the mountain and similar objects expected to protect but unable to do so. The negation *lā* is employed to indicate that protection is by Allah's will; He has mercy on whom He wills and punishes whom He wills.

"It is also permissible that 'lā dhī ʿiṣmah' means protected, and 'illā man raḥim' is an appositive clarifying who is protected."[23] Moreover, Allah knows best.

Conclusion:

The comparative approach yields significant research results by comparing languages on many levels. The level of linguistic styles particularly generates meanings and connotations and, in our view, is broader than others because of the wealth of styles within a single language. Arabic is among the richest languages in stylistic diversity because it relies on various and abundant rules for generating meanings and implications.

The key findings from this research paper are summarised as follows:

1. The comparative method revealed distinctions and divergences between Arabic and French in the use of metaphor both as a term and as a concept.

2. Languages do not necessarily share the same stylistic methods; as long as grammatical rules differ, the styles inevitably vary. Therefore, no language can be wholly subjected to the rules of another.

3. Each science has its specific terminology rooted in its native language and uniquely distinguished from translated terms, as translation may result in loss of the term's original specificity derived from its mother tongue. For this reason, Mokhtar Nouiouat attempts to bridge the conceptual differences between terms in the two languages.

4. The concept of metaphor differs between Arabic and French owing to differences in expressive modes and vocabulary. Since the words themselves differ, the rhetorical terms indicating artistic forms also differ, being grounded in usage shaped primarily by refined taste, especially in Arabic.

5. Rhetorical terminology generally varies from language to language, and languages may borrow terms from each other, adapting them according to their linguistic properties and rules at the phonetic, morphological, and other levels.

Acknowledgment

[23] Abū al-Ḥasan al-Mujāshʿī al-Balakhī then al-Baṣrī, known as al-Akhfash al-Awsaṭ, *Maʿānī al-Qurʾān*, ed. Hudā Maḥmūd Qarāʿah (Cairo: Maktabat al-Khānjī, 1990), vol. 1, 383.

The authors wish to express their gratitude to the Research Laboratory for Terminology and Lexicography at Yahia Farès University of Médéa for providing academic and institutional support. Appreciation is also extended to colleagues who offered valuable feedback and discussions during the preparation of this study.

Conflict of Interest

The authors declare no conflict of interest regarding the publication of this article.

References:

1. Abdul-Latif, E. (2023). Verifying the terminology of Arabic rhetorical tradition: The case of iltifāt. Theologia Viatorum, 33(1). https://doi.org/10.5788/33-1-1831
2. Abū al-Ḥasan al-Mujāshiʿī al-Balakhī then al-Baṣrī, known as al-Akhfash al-Awsaṭ, *Maʿānī al-Qurʾān*, ed. Hudā Maḥmūd Qarāʿa, Maktabat al-Khānjī, 1st ed. 1411 AH - 1990 CE, Cairo, Egypt.
3. Abū Bishr Muḥammad ibn Aḥmad ibn Ḥammād ibn Saʿīd ibn Muslim al-Anṣārī al-Dawlabi al-Rāzī, *Al-Kunā wa al-Asmāʾ*, ed. Abū Qutayba Naẓar Muḥammad al-Fāryābī, Dār Ibn Ḥazm, 1st ed. 1421 AH - 2000 CE, Beirut, Lebanon.
4. Aḥmad ibn Fāris ibn Zakariyyāʾ al-Qazwīnī al-Rāzī al-Ṣāḥibī, *Fiqh al-Lugha al-ʿArabiyya wa Masāʾiluhā wa Sunan al-ʿArab fī Kalāmahā*, ed. ʿUmar Fārūq al-Ṭibāʿ, Maktabat al-Maʿārif, Beirut, Lebanon, 1st ed. 1414 AH - 1993 CE.
5. Aḥmad ibn Ibrāhīm ibn Muṣṭafā al-Hāshimī, *Jawāhir al-Balāgha fī al-Maʿānī wa al-Bayān wa al-Badīʿ*, ed. Yūsuf al-Ṣumaylī, al-Maktaba al-ʿAsriyya, Beirut, Lebanon.
6. Fakhr al-Dīn al-Rāzī, *Mafātīḥ al-Ghayb or Al-Tafsīr al-Kabīr*, ed. Hudā Maḥmūd Qarāʿa, Dār Iḥyāʾ al-Turāth al-ʿArabī, 3rd ed., 1420 AH, Beirut, Lebanon.
7. Fakhri, A. (2009). Rhetorical variation in Arabic academic discourse: Interdisciplinary and intercultural issues. Journal of Pragmatics, 41(7), 1452–1466. https://doi.org/10.1016/j.pragma.2008.09.026
8. Hamidi, A., & Belabbes, S. (2025). Terminological Dictionaries between the Integration of Sciences and Harmony of Arts: Al-Khawarizmi's Mafatih al-Uloom (387 AH) and Al-Qannuji's Abjad al-Uloom (1307 AH) as a Model. Science, Education and Innovations in the Context of Modern Problems, 8(8), 61-71. https://doi.org/10.56352/sei/8.8.7
9. Hamra, H., & Hamra, H. (2025). The Manuscript Heritage of the Western Islamic World between Critical Textual Analysis and Codicological Study: A Dialogue of Arab and Foreign Cataloging Methodologies and Transformations in Literary Discourse. Science, Education and Innovations in the Context of Modern Problems, 8(9). https://imcra-az.org/uploads/public_files/2025-08/8978.pdf
10. Ismāʿīl ibn ʿAbbād al-Ṣāḥib, *Al-Muḥīṭ fī al-Lugha* (Kālī al-Kifāʾa), ed. Muḥammad Ḥasan Āl Yāsīn, ʿĀlam al-Kutub, 1st ed., 1414 AH - 1994 CE, Beirut, Lebanon.
11. Liebman, J. A. D. (1992). Toward a new contrastive rhetoric: Differences between Arabic and English. Journal of Second Language Writing, 1(2), 141–165. https://doi.org/10.1016/1060-3743(92)90013-F
12. Magrous, M. (2025). Meta-Criticism and Contemporary Arabic Literary Criticism. Science, Education and Innovations in the Context of Modern Problems, 8(6), 720-726. https://doi.org/10.56352/sei/8.6.80
13. Mchental, ʿA. ʿA. (2024). Al-taṣawwurāt al-manhajiyya ʿinda al-ustādh Mukhtār Nūyuwāt min khilāl maqālātihi fī al-juhūd wa-al-āthār al-ʿilmiyya [The methodological perceptions of Professor Mokhtar Nouiouat through his articles on scientific efforts and effects]. ASJP (Social & Human Sciences), 20 Jan 2024, 104–122.
14. Mokhtar Nouiouat, *Arabic Rhetoric in Light of Contemporary Rhetorical Approaches between French and Arabic Traditions*, Dar Houma Publishing, 2013, Algiers.
15. Muḥammad ʿAlī Sulṭānī, *Al-Mukhtār min ʿUlūm al-Balāgha wa al-ʿArūḍ*, Dār al-ʿIsmāʾ, 1st ed., 1427 AH – 2008 CE, Damascus, Syria.

16. Nouiouat, M. (2013). Al-balāgha al-ʿarabiyya fī ḍawʾ al-balāghāt al-muʿāṣira: Bayna al-balāghatayn al-faransiyya wa-al-ʿarabiyya, al-dirāsāt al-muqārana [Arabic rhetoric in the light of contemporary rhetorics: Between French and Arabic rhetoric, comparative studies]. Algiers: Dār Hūma.
17. Nouiouat, M. (2016). Al-balāgha al-ʿarabiyya fī ḍawʾ al-balāghāt al-muʿāṣira [Arabic rhetoric in light of contemporary rhetorics]. Maʿālim, 2016(...), Supreme Council of the Arabic Language.
18. Oumelkhier, S. (2025). Simultaneous and Consecutive Interpretation from English to Arabic: How Does Pragmatic Context Influence Meaning Transfer? Science, Education and Innovations in the Context of Modern Problems, 8(1). https://imcra-az.org/uploads/public_files/2025-03/selfoaoui.pdf
19. Qutbuddin, T. (2023). Arabic oration in early Islam: Religion, ritual, and rhetoric (Doctoral thesis/monograph). University of Oxford, ORA.
20. Ramadan, I., & Alkhamis, A. (2024). Arabic and Western rhetoric: A conceptual introduction to argumentation and critical discourse analysis. [Preprint].
21. Regagba, A., & Benlahrech, M. (2025). The Impact of Optimal Integration of the Holy Qur'an in Teaching Arabic Grammar: A Case Study of First-Year Secondary School (Common Core – Etiquette Track). Science, Education and Innovations in the Context of Modern Problems, 8(5), 254-263. https://doi.org/10.56352/sei/8.5.27
22. Semcheddine, S. (2023, May 9). Le professeur Mokhtar Nouiouat nous quitte: Une vie de djihad au service du savoir [Obituary/biographical note]. Mediapart Blogs.
23. Van De Wege, M. (2013). Arabic rhetoric (Master's thesis). Eastern Washington University. https://dc.ewu.edu/theses/1255

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Socio-Semiotic Approaches in Pedagogical Practice: Advancing Multiliteracy and Critical Thinking through Multimodal Analysis and Visual Transcription in the Digital Age

Dutova Natalya Valerievna

PhD in Philology, Docent, Assistant Professor

Department of Romano-Germanic Languages

Novosibirsk State Pedagogical University, Novosibirsk

Russia

E-mail: dutova_natalya@mail.ru

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords multiliteracy, multimodal analysis, socio-semiotic approach, visual transcription, digital pedagogy, critical thinking, cross-cultural communication.

Abstract

The rise of digital communication and multimodal discourse has transformed traditional understandings of literacy and pedagogy, demanding innovative frameworks for education. This study explores the socio-semiotic approach as a methodological and theoretical foundation for the development of multiliteracy in contemporary teaching practice. Multiliteracy, understood as the capacity to interpret, evaluate, and create meaning across multiple semiotic modes—including text, image, gesture, sound, and digital interaction—requires both critical engagement and reflexive awareness in cross-cultural contexts. The article situates multiliteracy within the broader pedagogy of the digital age, emphasizing its role in fostering learners' capacity to navigate complex semiotic landscapes. Special attention is given to multimodal analysis and visual transcription as practical tools for classroom application. These methods enable educators and students to move beyond intuitive interpretations of communicative choices toward empirically grounded insights into meaning-making processes. By drawing on socio-semiotic theory, the study illustrates how semiotic resources such as images, layouts, and soundtracks function in concert to achieve communicative goals. Findings from classroom-based experimentation demonstrate that students engaging with multimodal analysis develop enhanced critical thinking, improved cross-cultural communication skills, and greater autonomy in digital interaction. The socio-semiotic approach, therefore, offers not only a theoretical lens but also a pragmatic strategy for transforming educational practice in response to the challenges and opportunities of the 21st century. The paper argues that integrating socio-semiotic tools into teaching fosters an inclusive, reflective, and globally relevant pedagogy that empowers learners to participate effectively in increasingly multimodal societies.

Citation. Valerievna N.D. (2025). Socio-Semiotic Approaches in Pedagogical Practice: Advancing Multiliteracy and Critical Thinking through Multimodal Analysis and Visual Transcription in the Digital Age. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 900–905. https://doi.org/10.56352/sei/8.11.70

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 14.03.2025	Accepted: 11.06.2025	Published: 13.09.2025 (available online)

Introduction

In the 21st century, interactive digital media technologies increasingly influence all spheres of life, making the ability to critically analyze and interpret online news, websites, videos, and social media posts an essential skill of the present century.

In response to the challenges of the digital age, which has given rise to new media where language combines in complex and dynamic ways with images and sound resources, both domestic and international researchers in pedagogy and linguistics (T.G. Galaktionova, O.A. Kazakova, C. Jewitt, G. Kress, Bourne J., Franks A., Hardcastle J., Jones K., Euan R.L. Unsworth L., et al.) have developed theoretical and practical foundations for integrating multiliteracy into the educational process (Kazkova, 2024; Jewitt, 2017; Kress et al., 2005; Unsworth, 2021).

This article presents a socio-semiotic approach to multiliteracy education. The purpose of this work is to theoretically justify and describe the practical application of the socio-semiotic approach in developing multiliteracy through multimodal analysis and the method of visual transcription to foster critical thinking in digital learning environments. The theoretical basis for multimodal analysis is the socio-semiotic theory of analyzing multimodal texts, emphasizing teaching and learning metalanguage for decoding multimodal meanings. The described approach contributes to the development of analytical and critical thinking skills, enabling students to be responsible and active participants in the acquisition and dissemination of knowledge and information in contemporary society.

Literacy in the Digital Age

The changing conditions of digital technology use in the 21st century have given rise to the problem of developing new literacy skills across various research domains. According to Kress (2003), in the new millennium, "it is no longer possible to think of literacy in isolation from a wide range of social, technological, and economic factors" (p. 3).

Traditionally, literacy was linguistically limited, understood as mastery of language in a strictly linguistic sense. However, literacy cannot be considered solely as a linguistic phenomenon due to the pervasive digitization of society. The diversity of semiotic systems and the broad potential of heterogeneous semiotic resources to convey and receive educational information have led to the expansion and refinement of the concept of literacy.

In 1996, the New London Group developed the pedagogy of multiliteracies, extending beyond traditional literacy to include multiple discourses (The New London Group, 1996). Researchers (Anstey & Bull, 2005; Kress, 2003; Unsworth, 2001) aimed to integrate semiotically diverse modes of meaning-making, where texts are combined with visual, auditory, and behavioral forms of information delivery. According to multiliteracy pedagogy, the educational process comprises four interconnected components: modeling real-life situations to develop skills for interpreting and analyzing socio-cultural contexts; teaching metalanguage necessary for understanding meaning-making processes; conducting critical analysis to develop skills for interpreting social contexts and identifying the purpose of meaning creation; and applying these skills in practice by producing multimodal texts (The New London Group, 1996).

By 2001, multiliteracy pedagogy evolved with the inclusion of critical literacy, which became a central principle of this approach. The introduction of this concept is associated with L. Unsworth, who expanded multiliteracy to include abilities such as decoding text meaning, participating in text comprehension and production, functional use, and ultimately critical analysis. The textual analyst observes, analyzes visual and verbal information, and determines how the choice of linguistic and visual resources influences opinion expression and how alternative verbal and visual resources create differing perspectives (Unsworth, 2001).

Bull and Anstey (2005) complemented Unsworth's theoretical positions and presented decoding as the process of tracking the functioning of homogeneous and heterogeneous semiotic systems in a text. Another key idea is that using a text implies understanding that the structure of a text may vary across contexts and platforms, despite having the same communicative purpose.

The goal of multiliteracy pedagogy is to provide learners with experience in cognitive activity and to develop a range of skills, including critical thinking, reflection, participation in discussion, evaluating information reliability, understanding the author's intent, identifying communicative strategies, and effectively communicating using diverse digital tools (Anstey & Bull, 2005).

Further research by the Delphi Committee of the American Philosophical Association supplemented these skills with logical reasoning, evaluation, explanation, and self-regulation (The Delphi Report, 2025). Considering the above, Kellner (2021) argues that literacy in the digital era requires not only technical knowledge but also automated skills in reading, writing, communication, and the ability to critically analyze, interpret, and create print, graphic, audio, and multimedia materials.

Thus, in the context of digital society, traditional literacy, defined simply as the ability to read and write, is insufficient. Its meaning has expanded to include the ability to interpret and create meaning using a combination of semiotic resources—verbal, auditory, visual, graphic, and digital. Multiliteracy pedagogy opens new perspectives for forming this modern literacy, emphasizing critical thinking, reflection, multimodal text analysis, assessment of information reliability, and effective interaction in digital spaces. One of the tools facilitating this development is the socio-semiotic approach.

Multimodal Analysis as a Tool for Developing Multiliteracy in the Socio-Semiotic Approach

The socio-semiotic approach is interdisciplinary, encompassing anthropology, sociology, critical and pragmatic discourse theory, visual design concepts (Halliday, 1978; Kress & van Leeuwen, 2021; O'Tool, 1994), and other fields. The development of the socio-semiotic approach is described by Dutova (2024).

Within this approach, discourse is the interaction of multiple semiotic resources (language, images, music, etc.) used to create meanings and interpret social practices. An important aspect of meaning-making is the process of combining interconnected semiotic resources. The choice of semiotic resources is not merely conscious but represents a set of possible alternatives (Kress, 2003). The approach is based on the principle of metafunctionality, implemented through the combined functioning of semiotic resources performing three metafunctions: ideational (interpreting the perception of the world), interpersonal (establishing social relationships and expressing attitudes), and compositional (organizing meanings into coherent messages according to context).

Multimodal analysis, developed by Kress & van Leeuwen, O'Halloran, Norris, and Scollon & Scollon, is a practical tool for studying multimodal relationships in educational settings (Kress & Bezemer, 2023; O'Halloran, 2021; Norris, 2020; Scollon & Wong Scollon, 2003). According to Hobbs (2004), the digital age requires educators to use such technologies to analyze and develop students' critical thinking. Multimodal analysis exposes students to various semiotic choices available to authors when creating multimodal texts, providing tools for systematic study of new media texts and fostering the ability to critically analyze various functional text types and genres from print and digital sources.

The use of multimodal analysis to develop critical thinking and intercultural sensitivity was tested in intercultural communication courses. In the first phase, students learned metalanguage for analysis, including lectures, seminars, and exercises covering linguistic-pragmatic discourse features, communicative strategies, and culturally specific tactics in Russian and Anglo-American traditions. In the second phase, communicative situations were identified, and students analyzed expected behaviors of Russian and English cultural representatives depending on cultural type.

Students then analyzed film fragments illustrating interactions between supervisors and subordinates to study cultural dimensions of power distance using the visual transcription method (Norris, 2020). Visual transcription involves sequential study of homogeneous semiotic resources followed by analysis of heterogeneous resources in combination. Data were recorded in visual transcription protocols with screenshots, timestamps, and coded verbal and nonverbal actions. Students created protocols for nonverbal behavior (proxemics, kinesics, haptics, gaze) and verbal behavior (communicative strategies, tactics, and language tools). Students compared behaviors across cultures, explained motives, and identified cultural values.

This practice allows students to develop an understanding of cultural differences and the ability to critically interpret linguistic, visual, and audio resources, grounding their analysis in empirical evidence rather than intuition. Multimodal analysis demonstrates that verbal resources do not always dominate communication, and camera framing can serve as a strong interactive resource for guiding audience attention. The socio-semiotic approach thus supports empirical discovery of how semiotic choices achieve communicative goals.

Conclusion

The socio-semiotic approach, grounded in Halliday's theory of metafunctionality and Kress & van Leeuwen's multimodal design concepts, provides a solid theoretical foundation for developing critical thinking in education. Testing this approach through multimodal analysis and Norris' visual transcription method enables the transition from intuitive ideas about meaning-making to empirical practice with concrete analytical tools.

Application in intercultural communication courses showed that learning metalanguage and systematically recording verbal and nonverbal semiotic resources allows students to critically evaluate how semiotic choices impact communicative goals. Notably, nonverbal resources often dominate, which would remain undetected without multimodal analysis. This method fosters analytical competence, revealing hidden ideological and cultural meanings in media, forming the basis for critical thinking central to multiliteracy pedagogy.

In the digital era, multiliteracy is not merely a pedagogical innovation but a prerequisite for functioning effectively in an information society. It requires transitioning from theoretical instruction to practices that develop reflection, understanding of author strategies, evaluation of reliability, and creation of multimodal messages.

Future directions include expanding multimodal analysis to other humanities disciplines, developing digital tools such as interactive visual transcription templates, and conducting cross-cultural comparisons of multimodal practices to deepen understanding of cultural meaning-making and intercultural multiliteracy. The socio-semiotic approach thus enhances the educational process, ensuring efficiency, engagement, and meaningful learning in the digital age.

Methodology

The methodological framework of this study is grounded in a socio-semiotic approach, which emphasizes the role of semiotic resources in the construction of meaning across multimodal contexts. The research was conducted as part of teaching practice within the Romano-Germanic Languages Department of Novosibirsk State Pedagogical University, focusing on courses in cross-cultural communication and language pedagogy.

Research Design

The study employed a qualitative, classroom-based design, combining elements of case study and action research. Students participated in structured activities designed to integrate multimodal analysis and visual transcription into their learning processes. This approach allowed for both the observation of real teaching practice and the experimental testing of socio-semiotic strategies.

Participants

The participants included undergraduate students majoring in linguistics and cross-cultural communication. A total of 45 students (aged 18–22) took part in the study over one academic semester. The selection was based on voluntary participation, with informed consent obtained in advance.

Data Collection Methods

1. Classroom Observations: The researcher systematically documented classroom interactions, focusing on students' responses to multimodal analysis tasks.

2. Student Artifacts: Written reflections, visual transcriptions, and analytical notes produced by students were collected and analyzed.

3. Semi-Structured Interviews: A subset of students (n=12) participated in interviews to provide insights into their experiences with multimodal tasks and perceptions of multiliteracy development.

Analytical Tools

The study applied multimodal analysis and visual transcription techniques to examine how students interpreted semiotic resources such as images, gestures, sounds, and textual arrangements. Multimodal analysis enabled the deconstruction of meaning-making processes, while visual transcription provided an empirical representation of the temporal and spatial organization of multimodal texts.

Data Analysis

The collected data were coded thematically, with particular attention paid to patterns in students' critical reflections, interpretative strategies, and demonstrated shifts from intuitive to evidence-based judgments. Triangulation was achieved by comparing classroom observations, student artifacts, and interview data to ensure the reliability and validity of the findings.

Ethical Considerations

Ethical approval was obtained from the faculty committee of Novosibirsk State Pedagogical University. All participants were informed of the study's purpose, and their anonymity and confidentiality were guaranteed. Participation was voluntary, and no academic penalties or incentives influenced involvement.

Findings

Enhanced Critical Literacy: Students developed the ability to critically analyze multimodal texts, identifying how semiotic resources such as images, gestures, and sounds contribute to meaning-making.

Empirical Insight through Visual Transcription: The method of visual transcription allowed learners to shift from subjective interpretations toward evidence-based conclusions, thereby strengthening academic rigor.

Improved Cross-Cultural Competence: The socio-semiotic framework facilitated more effective engagement with diverse communicative practices, enhancing intercultural understanding.

Pedagogical Innovation: The socio-semiotic approach provided teachers with structured tools for integrating multimodal analysis into curricula, supporting the pedagogy of multiliteracy.

Digital Readiness: By situating literacy in digital contexts, the approach prepared students for the challenges of contemporary communication, including the ability to reflect, critique, and participate responsibly in digital environments.

Acknowledgement

The author expresses sincere gratitude to the Romano-Germanic Languages Department of Novosibirsk State Pedagogical University for institutional support and to the students who participated in the experimental classes on multimodal analysis and cross-cultural communication. Their active engagement provided valuable insights into the practical application of the socio-semiotic approach in pedagogical practice.

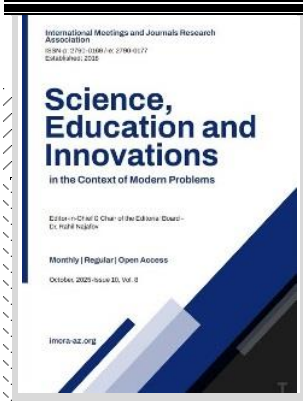
Conflict of Interest

The author declares no conflict of interest. The research was conducted independently, without any commercial or financial relationships that could be construed as a potential conflict of interest.

References

1. Anstey, M., & Bull, G. (2005). *Foundations of multiliteracies: Reading, writing and talking in the 21st century.* London: Routledge.
2. Dutova, N. V. (2024). Становление социально-семиотического подхода к анализу мультимодального дискурса: обзор зарубежного опыта. *Вестник Северного (Арктического) федерального университета. Серия: Гуманитарные и социальные науки*, 64–74.
3. Halliday, M. A. K. (1978). *Language as social semiotic: The social interpretation of language and meaning.* London: Edward Arnold.
4. Hobbs, R. (2004). A review of school-based initiatives in media literacy education. *American Behavioral Scientist, 48*(1), 42–59.
5. Jewitt, C. (2017). Different approaches to multimodality. In C. Jewitt (Ed.), *The Routledge handbook of multimodal analysis* (2nd ed., pp. 31–43). London: Routledge.
6. Kellner, D. (2021). Digital technologies, multi-literacies, and democracy: Toward a reconstruction of education. In *Technology and democracy: Toward a critical theory of digital technologies, technopolitics, and technocapitalism* (pp. 257–287). Wiesbaden: Springer VS.
7. Kress, G. (2003). *Literacy in the new media age.* London & New York: Routledge.
8. Kress, G., & Bezemer, J. (2023). Multimodal discourse analysis. In *The Routledge handbook of discourse analysis* (pp. 139–155). London: Routledge.
9. Kress, G., & van Leeuwen, T. (2021). *Reading images: The grammar of visual design* (3rd ed.). London: Routledge.
10. Kress, G., Jewitt, C., Bourne, J., Franks, A., Hardcastle, J., Jones, K., & Unsworth, E. R. L. (2005). *English in urban classrooms: A multimodal perspective on teaching and learning.* London: Routledge Falmer.
11. Norris, S. (2020). *Multimodal theory and methodology: For the analysis of (inter)action and identity.* London: Routledge.
12. O'Halloran, K. L. (2021). Multimodal discourse analysis. In K. Hyland, B. Paltridge, & L. Wong (Eds.), *The Bloomsbury handbook of discourse analysis* (pp. 249–267). London: Bloomsbury.
13. O'Tool, M. (1994). *The language of displayed art.* Rutherford, Madison, Teaneck: Fairleigh Dickinson University Press.
14. Scollon, R., & Wong Scollon, S. (2003). *Discourses in place: Language in the material world.* London: Routledge.

15. The Delphi Report. (2025). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction.* Retrieved from https://insightassessment.com/iaresource/the-delphi-report-a-statement-of-expert-consensus-on-the-definition-of-critical-thinking/
16. The New London Group. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review, 66*(1), 60–93.
17. Unsworth, L. (2001). *Teaching multiliteracies across the curriculum: Changing contexts of text and image in classroom practice.* Buckingham: Open University Press.
18. Unsworth, L. (2021). High school science infographics: Multimodal meaning complexes in composite image-language ensembles. *Pensamiento Educativo, Revista de Investigación Educacional Latinoamericana, 58*(2), 1–18.
19. Unsworth, L., & Mills, K. A. (2020). English language teaching of attitude and emotion in digital multimodal composition. *Journal of Second Language Writing, 47.* Retrieved from https://www.sciencedirect.com/special-issue/10LLQCLH60F



Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Legal Consultation in the Era of Artificial Intelligence: Challenges of Civil Liability, Ethical Accountability, and the Redefinition of Professional Practice in the Digital Age

Larguet Samira
Lecturer (B)
Faculty of Law and Political Science, Mohamed Lamine Debaghine University – Sétif 2, Member of the Research Laboratory on Human Rights Studies, Faculty of Law and Political Science, Mohamed Lamine Debaghine University – Sétif 2
Algeria
E-mail: s.larguet@univ-setif.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Artificial Intelligence; Legal Consultation; Civil Liability; Legal Analysis; Legislative Framework; Ethical Responsibility.

Abstract

Artificial intelligence (AI) has emerged as one of the most disruptive technological developments of the 21st century, reshaping multiple professional domains, including law and legal consultancy. Within the legal field, AI-driven tools are increasingly utilized to streamline tasks such as case analysis, document review, legal research, and contract drafting. These tools significantly enhance efficiency, reduce the time required for repetitive processes, and provide consultants with predictive insights based on vast databases of jurisprudence and statutory frameworks. Despite these advantages, the integration of AI into legal consultancy presents fundamental challenges. Central among these is the reliability of algorithmic outputs, which often lack contextual sensitivity, interpretive nuance, and ethical reasoning that characterize human legal judgment. Furthermore, the absence of a comprehensive and binding legislative framework regulating the use of AI in legal practice generates considerable ambiguity in terms of accountability and civil liability for errors, omissions, or biased outcomes produced by AI systems.

This study demonstrates that AI should not be regarded as a replacement for human legal consultants but rather as an auxiliary instrument functioning under their direct supervision. The research highlights that legal consultants remain irreplaceable in providing interpretive reasoning, ensuring the validity of legal arguments, and safeguarding ethical responsibility. Findings suggest that while AI enhances productivity, it also introduces risks of over-reliance, data privacy breaches, and unresolved issues of liability in cases of erroneous or misleading outputs. Accordingly, the paper concludes that the effective use of AI in legal consultancy requires a dual approach: (i) legal reforms to establish a clear regulatory and liability framework governing AI-assisted advice, and (ii) the reinforcement of human oversight to ensure the accuracy, fairness, and ethical legitimacy of AI-driven legal processes. The study underscores that the future of legal consultation lies not in the substitution of human expertise but in the symbiotic interaction between human consultants and intelligent technologies, thereby fostering a more efficient yet accountable legal system.

Citation. Larguet S. (2025). Legal Consultation in the Era of Artificial Intelligence: Challenges of Civil Liability, Ethical Accountability, and the Redefinition of Professional Practice in the Digital Age. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 907–915. https://doi.org/10.56352/sei/8.11.71

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).
Received: 25.01.2025	Accepted: 17.06.2025	Published: 13.09.2025 (available online)

1. Introduction:

The advent of artificial intelligence has triggered profound transformations across multiple fields, including the legal domain, which was traditionally the preserve of legal professionals such as lawyers, notaries, bailiffs, and university professors specializing in law. These professionals were legally authorized to provide legal consultations. In the present day, however, access to legal information has become attainable through technological advancements, with sophisticated algorithms capable of analyzing legal texts and predicting possible solutions to specific disputes.

This evolution in the use of technology, particularly artificial intelligence tools, prompts several pressing questions: Can artificial intelligence genuinely deliver legal information with precision, transparency, and impartiality? Does it truly enhance the effectiveness of legal professionals? In light of these considerations, the following research problem emerges:

Do artificial intelligence tools threaten the role of legal consultants, or do they serve as complementary instruments supporting their profession?

Moreover, under what circumstances do legal consultants remain accountable for errors that result from the use of artificial intelligence in providing legal consultation?

Research Hypotheses:

Examining legal consultation in the era of artificial intelligence requires the formulation of a set of hypotheses to illuminate this technological transformation:

- **Hypothesis 1:** Artificial intelligence facilitates the work of legal consultants and legal professionals in general, and contributes to improving their performance.
- **Hypothesis 2:** Drafting legal consultations through artificial intelligence diminishes the credibility of legal consultation.
- **Hypothesis 3:** The legal consultant remains responsible for errors contained in legal consultations prepared using artificial intelligence.

Research Methodology:

This study adopts a descriptive-analytical approach, identifying and describing the functioning of artificial intelligence tools and applying this framework to the field of legal consultation. The methodology also involves analyzing both the positive and negative dimensions of these tools.

Study Axes:

The problem under discussion will be examined through three main axes:

- **Axis 1:** The nature of artificial intelligence.
- **Axis 2:** The impact of using artificial intelligence in the legal field.
- **Axis 3:** Defining responsibilities in the use of artificial intelligence tools in legal consultation.

Axis 1: The Nature of Artificial Intelligence

Defining the nature of artificial intelligence with precision is not a simple task, as it continues to evolve constantly. Nevertheless, numerous attempts have been made to provide definitions, some of which are presented below:

First: Definition of Artificial Intelligence

Artificial intelligence is a branch of computer science that refers to the ability of machines to replicate human behavior, including processes such as thinking, planning, and even creativity.

At its core, it consists of algorithms that enable machines to analyze, make decisions, and adapt intelligently to different situations. Through the use of neural networks inspired by the schematic functioning of biological neurons, artificial intelligence systems are also capable of predicting outcomes based on acquired data.

These definitions, articulated from a technical perspective, emphasize the complexity of artificial intelligence and its continuous development. Attempts have also been made to define artificial intelligence from a legal perspective, though without achieving a universally comprehensive definition.

One of the most significant contributions is that of Alexandre Vial, who suggests defining artificial intelligence as a software system operating on algorithms that collect and utilize data, capable of partial or complete autonomous learning, and able to make decisions either partially or fully independently on the basis of learning and the use of data.[1]

This definition seeks to establish a general framework for understanding artificial intelligence.

Second: History of Artificial Intelligence

When addressing the origins of artificial intelligence, reference is often made to ten conferences held between 1946 and 1953 by the Macy Foundation. These conferences were preceded by a pivotal event in 1942: a meeting on brain inhibition organized by Frank Smith, director of the Jasiah Macy Jr. Foundation. [2]

This interdisciplinary meeting brought together Warren McCulloch and Arturo Rosenblueth, specialists in neurobiology and physics, who were the first to design a model of the neuron based on binary logic. Their model laid the groundwork for the construction of virtual neurons and later neural networks, positioning them among the earliest advocates of modeling the brain through a digital approach, with information encoded according to the binary system of 1 and 0.[3]

The meeting also included Margaret Mead and Gregory Bateson, specialists in anthropology, along with Lauren Kubie, a psychoanalyst, all of whom were engaged in efforts to better understand human thought processes. In addition, the founder of the Macy Foundation was present, and subsequent participants included Julien Bigelow, a physicist and computer engineer, and John von Neumann, a mathematician and the founder of game theory.

---

[1] Alexandre Vial, *"Artificial Intelligence Systems and Civil Liability: Positive Law and Proposal for Reform"*, Doctoral Thesis, Law, University of Bourgogne, France, 2022, p. 42.

[2] The Josiah Macy Jr. Foundation, also known as the Macy Foundation, is an American organization established in 1930 to support health and education. It is well known for the Macy Conferences, which brought together scientists from diverse fields and played a major role in the development of cybernetics.

[3] Jacques Haiech, *"Tracing the History of Artificial Intelligence to Better Define and Understand It"*, *Médecine et Sciences*, No. 10, Vol. 36, October 2020.
https://doi.org/10-1051/Medsci/2020145. Accessed 05-04-2025 at 00:16.

Alan Turing also made a decisive contribution with his landmark 1950 article addressing the question "Can machines think?", which laid the foundation for the creation of the world's first programmable computers. In other words, the pursuit of simulating human thought became the cornerstone of major advances in computer science, ultimately leading to the emergence of artificial intelligence.[4]

In 1956, John McCarthy and Marvin Minsky envisioned a future in which machines would not only simulate humans but also be capable of learning, adapting, and thus making decisions. This constituted the first true foundation of artificial intelligence, which has since undergone immense development and has spread across all areas of life—so much so that imagining its future has become daunting.

Axis 2: The Impacts of Artificial Intelligence in the Legal Field

Legal professionals seek to benefit from artificial intelligence tools in their practice, particularly in assisting with specific tasks and enhancing performance in order to provide better services to clients. However, such use inevitably presents drawbacks, which can be addressed through the following points:

First: Advantages of Using Artificial Intelligence in Legal Consultation

The application of artificial intelligence offers numerous services in the legal domain, the most significant of which include:

1 – Legal Analysis:

Artificial intelligence has introduced substantial transformations in legal analysis, facilitating the interpretation of complex legal texts in a manner that is faster, more accurate, and more accessible. With artificial intelligence, it is possible to examine laws, judicial rulings, court decisions, and regulatory texts in record time. This enables legal professionals to obtain a clearer understanding of the interconnections among legal provisions relevant to a particular case.

Such outcomes are achieved through machine learning algorithms capable of extracting information pertinent to the consultation subject and analyzing data accordingly. As a result, legal analysis becomes more comprehensive and precise. This not only accelerates decision-making but also ensures that the analysis is grounded in reliable and up-to-date data.[5]

2 – Enhancing Efficiency and Productivity

Efficiency is reflected in the facilitation of drafting legal documents, including contracts and other documents that traditionally require considerable time for preparation. These have become known as smart contracts, representing a novel method of automated contract execution supported by Blockchain technology. Such innovations are expected to reshape the legal field and compel legal professionals to adapt to these emerging circumstances.[6]

With the assistance of artificial intelligence, these documents can now be produced in record time while maintaining accuracy, credibility, and consistency in managing the various variables specific to each case or file. [7]

Furthermore, artificial intelligence contributes to risk assessment, strategic development, compliance with legal obligations, and the reinforcement of legal protection by supplying updated information consistent with the latest legislative amendments.[8]

---

[4] Cédric Arnaret, *"The History of Artificial Intelligence: Origins, Evolution, and Perspectives"*, SEP Édition ADN, France, 5 March 2025. https://iafortune.fr/l'histoire-de-l'intelligence-artificielle/ Accessed 05-04-2025 at 15:54.

[5] Philippe Claudon and Bruno Deffains, *"Artificial Intelligence in the Legal Sector: Myths and Reality"*, *Innovation*, 21 March 2024. https://Storage.googleapis.com/public. Accessed at 22:15.

[6] Boris Barraud, *"Law in Data: How Artificial Intelligence Redraws the Legal World"*, *Revue Lamy, Droit de l'immatériel*, 2019, pp. 49–54. Hal-02445023.

[7] *Artificial Intelligence in Legal Practice: Revolution, Challenges, and Perspectives.* https://formation.lefebre-dalloz.fr/actualité-dans-la-pratique-juridique-revolution-enjeux-perspective. Published 26-03-2025, accessed 30-03-2025 at 22:57.

Artificial intelligence operates through algorithms designed to analyze databases and judicial decisions. In the field of legal data analysis, it employs data mining techniques to extract statistics and case outcomes relevant to the subject of consultation, which are made available in the digital domain—while encrypting the identities of the litigants to safeguard their privacy.[9]

Overall, the use of artificial intelligence in legal consultation constitutes a substantial advantage for lawyers and legal consultants, as it enables them to save time and review a greater number of files, thereby generating economic benefits. In addition, it presents several advantages for judges, as it allows them to expedite the issuance of rulings, thereby reducing delays in case processing and alleviating the accumulation of cases in the courts.[10]

Second: Disadvantages of Using Artificial Intelligence in Legal Consultation

Although artificial intelligence has become an effective tool for accelerating and simplifying legal processes, its use in the field of legal consultation presents several challenges and has been subject to various criticisms. The most significant drawbacks can be summarized as follows:

1 – Credibility of Information Obtained Using Artificial Intelligence:

It must be stressed that the initial models of artificial intelligence, even today, continue to suffer from limitations. There are no programs currently capable of predicting the outcomes of disputes presented before the courts with a high degree of reliability.[11]

In addition, the work of lawyers and legal consultants inherently requires a creative dimension that enables them to devise solutions for disputes that have not been previously addressed. By contrast, artificial intelligence relies on compiling the results of past disputes and therefore lacks the capacity to produce genuinely novel solutions. Furthermore, the practice of law is inseparable from creativity, which is essential for adapting to socio-economic developments.[12]

2 – Lack of Deep Understanding of the Legal Context:

Even though artificial intelligence tools significantly assist legal consultants by gathering information and analyzing vast quantities of data in record time, they may still fail to apprehend the social complexities or cultural contexts that shape the interpretation of law. These tools may misinterpret legal texts when such texts are ambiguous or susceptible to multiple interpretations. Moreover, artificial intelligence lacks elements such as emotion or empathy, which are intrinsic human qualities of great importance in the practice of law.[13]

Legal cases frequently involve human or psychological dimensions—such as the motivations of parties or the influence of social pressures—that artificial intelligence is unable to comprehend.

Axis 3: Determining Liability for the Use of Artificial Intelligence in Legal Consultation

---

[8] Boris Barraud, Op. cit., p. 50.
[9] Ait Ali Zaina, *"Predictive Justice in the Age of Artificial Intelligence: Advantages and Disadvantages"*, *Revue Afak Sciences*, Vol. 8, No. 3, 2023, pp. 584–596.
[10] Ibid., p. 560.
[11] E. Kestenaire, *"Justice and Legal Protection: What Contribution to Our Client Relationship?"*, *Arch-phil, Droit*, 2018, p. 278.
[12] Jacquemine Hervé and Hubin Jean-Benoît, *"Artificial Intelligence: True or False Friend of the Litigant? The Stakes of AI Use by Lawyers, Insurers, and Legaltechs"*, in *The Judge and the Algorithm: Augmented Judge or Weakened Justice?*, CRDIS Collection, No. 46, Larcier, Brussels, 2019, pp. 75–104.
[13] Canvat Raphael, *"Artificial Intelligence in Legal Practice: Reception in European Law, Impact on the Legal Profession and Ethics"*, Faculty of Law and Criminology, University of Louvain, France, 2020, p. 25.
https://hdl:handle.net/2078-1/thesis:24422. Accessed 15-04-2025.

The issue of determining liability for the use of artificial intelligence in legal consultation is highly complex due to the multiplicity of parties involved and the overlapping nature of their roles. Each party plays a role that may result in an error or cause harm.

First: Civil Liability for Errors of Artificial Intelligence

Civil liability refers to an individual's responsibility for the consequences of negligence committed either by themselves or by those under their supervision and control. More specifically, civil liability is a legal obligation imposed on a person—whether natural or legal—to compensate for damage suffered by others as a result of a wrongful act or unlawful conduct committed by them, or caused by an object or animal under their custody, or through the failure to fulfill contractual obligations.[14]

Whether contractual liability or tort liability is at issue, both are based on the principle of a person's ability to reason—that is, full mental capacity and legal majority—combined with the commission of an act contrary to the law, which results in harm to others and thus entails personal liability requiring compensation for the damage caused. As is well established, tort liability takes multiple forms: personal liability, liability for the acts of others, liability for things, in addition to the more recent regime of product liability for defective products.[15]

Accepting liability for harm caused by outcomes generated by algorithms would imply recognizing the liability of "machines" containing such algorithms. This is a highly controversial matter, as it would suggest that technical objects possess legal personality, while in reality, they remain only partially autonomous systems programmed, designed, and configured by humans, and ultimately remain subject to human control.[16]

This presents another difficulty: identifying responsibility among the numerous actors contributing to the development and operation of artificial intelligence—the manufacturer, the programmer, the operator, and the user. Given the multiplicity of their roles, separating their respective faults becomes challenging. This situation necessitates examining the conduct of each party, analyzing it, and determining its relation to the damage.[17]

Moreover, highly advanced forms of artificial intelligence, such as Machine Learning, raise the further question of whether the manufacturer, programmer, operator, or user truly retains the ability to control these algorithms. This type of artificial intelligence is characterized by autonomy, unpredictability, and lack of control.

As a result, it negates the attribution of personal liability to individuals for actions not performed directly by them, making it impossible to invoke the concept of human fault without which the harm would not have occurred.

Nevertheless, some legal scholars argue that human fault is always the underlying cause of damage attributed to intangible objects, since such objects cannot, by themselves, independently cause harm.[18]

Second: Liability of the Legal Consultant for the Use of Artificial Intelligence in Preparing Legal Consultation

The use of artificial intelligence by legal consultants, lawyers, or legal professionals in general for the preparation of legal consultations raises numerous questions, as this practice poses significant risks in reality.

It is therefore essential to distinguish between artificial intelligence systems composed of algorithms that merely assist in decision-making, and artificial intelligence programs composed of algorithms capable of making decisions

[14] Thabet Dania, *"The Basis of Civil Liability Between the Traditional and Modern Concept"*, *Journal of Legal and Social Sciences*, University of Ziane Achour, Djelfa, Algeria, Vol. 8, No. 3, September 2023, pp. 209–221.
[15] Hans Jonas, *"An Ethics for Nature"*, Arthaud Poche, *Les fondamentaux de l'écologie*, 2017, p. 99
[16] Mostafa Abou Mandour Moussa Issa, *"The Adequacy of General Rules of Civil Liability in Compensating Damages Caused by Artificial Intelligence"*, *Journal of Law, Damietta for Legal and Economic Studies*, No. 5, January 2022, p. 233.
[17] Ibid., p. 271.
[18] Rafaf Lakhdar / Miouf Fayrouz, *"The Specificity of Civil Liability for Damages Caused by Artificial Intelligence Systems in Algerian Law"*, *Tébessa Journal for Academic Scientific Studies*, Vol. 6, No. 1, 2023, p. 582.

fully autonomously. The latter presents considerable danger, as it does not take into account the specific circumstances of litigants or the client seeking consultation.[19]

This underscores the necessity of the legal consultant's presence and continuous supervision throughout all stages of preparing the legal consultation. In other words, artificial intelligence may be integrated and utilized within the preparation process, but it must never be left to draft a legal consultation entirely on its own without proper verification of the results.[20]

Consequently, errors arising from artificial intelligence raise important questions about responsibility. Should the legal consultant be held accountable when using AI tools developed by a third party? Or should liability fall upon the company that developed the system? These questions demand a careful analysis of existing legal frameworks and an alignment of liability principles with the ongoing developments in artificial intelligence. In many cases, the legal consultant may indeed be liable for errors resulting from the use of AI tools, particularly when such tools are used improperly or when the consultant fails to verify the outcomes.

However, there may also be circumstances in which the developer company is held responsible for errors, especially in cases where defects exist in the software or algorithms. Accordingly, there is a pressing need to establish clear and precise rules and to develop a legal framework that aligns with technological progress, while setting standards to ensure the responsible use of these technologies.

From this perspective, it can be concluded that artificial intelligence cannot, under any circumstances, replace human involvement, as the sensitivity of cases requiring consultation presupposes precision in their handling. Hence, the use of artificial intelligence in preparing legal consultations must always remain under the supervision of the legal consultant in order to avoid erroneous or biased results that may arise from deficiencies in the databases employed or from algorithmic misinterpretations.

Furthermore, the human relationship between the legal consultant and the client—built on trust and psychological support—cannot be replaced by a machine. The majority of clients continue to prefer direct, face-to-face meetings with legal consultants and do not fully place their trust in artificial intelligence tools.

This highlights the importance of the human element as a crucial and irreplaceable foundation in the work of legal consultants, whose responsibility therefore remains intact.

Conclusion:

Although artificial intelligence tools contribute to saving time and effort, this does not exempt the legal advisor from the fundamental responsibility of ensuring the accuracy and validity of the information provided to the client or to the court. The role of the legal advisor is not limited to transmitting information; rather, it is a task that demands a high degree of intellectual and legal skill, as well as expertise in the legal field. For this reason, the advisor must exercise sound judgment and precision when employing artificial intelligence tools in professional practice.

- The use of artificial intelligence tools in legal consultation has accelerated legal research and analysis processes, thereby facilitating the work of legal advisors.

[19] Pauline Bertrand, *"Decision-Making Support Systems in Judicial and Legal Matters: Ethical, Technical, and Legal Aspects in Comparative Law (France, Germany, United States)"*, Master 2 Comparative Business Law, Harvard Law School, 2021–2022, p. 89.
[20] Emilie Guiraud, *"The Role of Ethics in Establishing Certification for the Use of Algorithms in the Legal System"*, *Éthique Publique*, Vol. 21, No. 01, 2019.
https://doi.org/10.4000/ethiquepublique-4429. Accessed 13-05-2025.

- Analytical errors may occur when using artificial intelligence tools, which could result in incorrect legal outputs and potentially harm the interests of the client seeking legal advice.

- Artificial intelligence must be regarded as an auxiliary tool that supports the work of legal advisors, rather than as a complete substitute.

- A comprehensive legislative framework regulating the use of artificial intelligence in the legal field is still lacking.

Findings

1. AI as a Supportive Tool, Not a Replacement: The study confirms that AI technologies improve efficiency in legal practice but cannot replace the interpretive, ethical, and strategic reasoning of legal consultants.
2. Civil Liability Concerns: The absence of clear legislation leaves significant ambiguity in determining liability for errors or damages arising from AI-generated legal advice. Consultants remain primarily responsible for validating AI outputs.
3. Reliability and Accuracy: While AI tools expedite research and analysis, they are prone to algorithmic bias, lack of contextual awareness, and limitations in interpreting complex legal reasoning.
4. Ethical Accountability: Legal consultants carry the ethical obligation to ensure that the integration of AI does not compromise justice, fairness, or client confidentiality.
5. Need for Legal Reform: The research stresses the necessity of adopting comprehensive legislative and regulatory frameworks to govern AI in legal practice, focusing on liability, professional responsibility, and data protection.
6. Future Outlook: AI is best understood as a complementary partner to human expertise, requiring balanced integration that strengthens, rather than undermines, the ethical and professional foundations of legal consultancy.

Acknowledgement

The author expresses sincere gratitude to the Faculty of Law and Political Science at Mohamed Lamine Debaghine University – Sétif 2, as well as to the Research Laboratory on Human Rights Studies, for their academic support. Special thanks are extended to colleagues and students who provided constructive feedback on the practical implications of artificial intelligence in legal consultancy.

Ethical Considerations

This research was conducted in accordance with academic and ethical standards for scholarly work. All arguments, analyses, and conclusions are based on independent academic judgment without the influence of third-party interests. No confidential case data or personal client information was used in the preparation of this study. The study is purely conceptual and does not involve human or animal subjects, thereby requiring no formal ethical approval.

Conflict of Interest

The author declares no conflict of interest. The research was conducted independently, without any financial, institutional, or personal relationships that could be construed as a potential conflict.

References

1. Abou Mandour, M. M. I. (2022). The adequacy of general rules of civil liability in compensating for damages resulting from artificial intelligence. Al-Huqooq Journal, Damietta for Legal and Economic Studies, (5).
2. Thabet, D. (2023). The basis of civil liability between the traditional concept and the modern concept. Journal of Legal and Social Sciences, Ziane Achour University, Djelfa, 8(3).

3. Refaf, L., & Maïouf, F. (2023). The specificity of civil liability for damages caused by artificial intelligence systems in Algerian law. Tobna Journal of Academic Scientific Studies, 6(1).
4. Ait Ali, Z. (2023). Predictive justice in the age of artificial intelligence: Advantages and disadvantages. Afak Sciences Review, 8(3).
5. Arnaret, C. (2025, March 5). The history of artificial intelligence: Origins, evolution, and perspectives. SEP ADN Edition. https://iafortune.fr/l'histoire-de-l'intelligence-artificielle/
6. Barraud, B. (2019). Law in data: How artificial intelligence redraws the legal world. Lamy Review, Intellectual Property Law.
7. Bertrand, P. (2021–2022). Decision-support systems in judicial and legal matters: Ethical, technical, and legal aspects in comparative law (France, Germany, United States) [Master's thesis, Harvard Law School].
8. Canvat, R. (2020). Artificial intelligence in the practice of law: Reception in European law, impact on the legal profession, and ethics (p. 25). Faculty of Law and Criminology, University of Louvain. https://hdl.handle.net/2078-1/thesis:24422
9. Claudon, P., & Deffains, B. (2024, March 21). Artificial intelligence in the legal sector: Myths and reality. Innovation. https://storage.googleapis.com/public
10. Guiraud, E. (2019). The role of ethics in establishing certification for the use of algorithms in the legal system. Public Ethics, 21(1). https://doi.org/10.4000/ethiquepublique-4429
11. Haiech, J. (2020). Exploring the history of artificial intelligence to better define and understand it. Medicine and Science, 36(10). https://doi.org/10.1051/medsci/2020145
12. Jacquemine, H., & Hubin, J.-B. (2019). Artificial intelligence: True or false friend of the litigant? Issues of AI use by lawyers, insurers, and LegalTechs. In The judge and the algorithm: Augmented judges or diminished justice? (CRDIS Collection, No. 46). Larcier.
13. Jonas, H. (2017). An ethics for nature. Arthaud Poche.
14. Kestenaire, E. (2018). Justice and legal protection: What contribution in our client relationship? Arch-Phil, Law.

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

German Orientalism and the Foundations of Arabic Linguistic Studies: Franz Rosenthal as a Case Study and His Intellectual Influence on Noam Chomsky

Djilali Faci
Blida 2 University
Algeria
E-mail: d.faci@univ-blida2.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords German Orientalism, Franz Rosenthal, Arabic linguistics, Arab heritage, Chomsky, philology, comparative linguistics.

Abstract

This study explores the intellectual trajectory of German Orientalism and its pivotal role in the development of Arabic linguistic studies, focusing on the works of Franz Rosenthal as a central model. German engagement with the Arabic intellectual tradition can be traced back to the Crusades, when European scholars first encountered Arabic manuscripts and scientific knowledge. Over the centuries, this engagement evolved into a systematic and scholarly discipline, wherein German orientalists devoted themselves to collecting, translating, and critically analyzing classical Arabic texts. Franz Rosenthal (1914–2003), one of the most influential orientalists of the twentieth century, distinguished himself through his contributions to Arabic philology, literature, and historical scholarship. His seminal works—including *A Grammar of Biblical Aramaic*, *Knowledge Triumphant*, and his translation of Ibn Khaldun's *Muqaddimah*—demonstrate not only linguistic mastery but also a profound respect for Arab intellectual heritage.

This paper aims to highlight Rosenthal's scholarly efforts within the broader framework of German Orientalism and to investigate how his approaches shaped subsequent debates in modern linguistics. Of particular importance is the intellectual intersection between Rosenthal's philological precision and Noam Chomsky's theoretical advances in generative grammar. While their fields and methods differed significantly, Rosenthal's rigorous treatment of language as both a cultural and structural phenomenon created pathways that resonated with Chomsky's universalist vision of grammar. Through this comparative lens, the article situates Rosenthal's scholarship within both the Orientalist tradition and the global discourse on language, thereby contributing to a deeper understanding of the cross-cultural transmission of linguistic knowledge.

The study concludes that German Orientalism, exemplified by Rosenthal, not only preserved and disseminated Arab linguistic heritage but also indirectly contributed to the paradigmatic shifts in modern Western linguistic theory, including those advanced by Chomsky.

Citation. Djilali F. (2025). German Orientalism and the Foundations of Arabic Linguistic Studies: Franz Rosenthal as a Case Study and His Intellectual Influence on Noam Chomsky. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 916–924. https://doi.org/10.56352/sei/8.11.72

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 26.01.2025 | Accepted: 17.06.2025 | Published: 12.09.2025 (available online)

Introduction:

While French and English Orientalism were among the earliest Orientalist schools, German Orientalism followed

in their footsteps, with its figures showing interest in studying the heritage created by the Arabs throughout history. The contributions of the Germans in editing, publishing, and translating Arabic and Islamic heritage exceeded those of others before them in terms of precision, objectivity, and scholarly integrity. To achieve this, they were keen to learn the Arabic language and study its literature.

1. The Beginning of German Interest in Arabic Heritage:

The earliest roots of contact between the Germans and the Arab-Islamic East can be traced back to the days of the Second Crusade (1147–1149 CE). The Germans participated in pilgrimages to the Holy Land alongside the Flemish, Frisians, Normans, English, and Scots. They described those lands and brought back aspects of their civilization upon returning home. Monks also participated in translation from Arabic in Andalusia.[1]

In the fourteenth and fifteenth centuries, there was an intention to establish chairs for the study of Eastern languages in Germany, concurrent with the late founding of German universities compared to the rest of Europe. However, the sixteenth century marked the most important stage in the history of German Orientalism, as Oriental studies then received clear attention through the scholarly efforts of German figures who played a foundational role in these studies, known as professors of Eastern languages. Initially, their work focused on teaching Hebrew to theology students, with lectures on the interpretation of the Torah. Alongside this, instruction in Arabic, Syriac, and other Semitic languages began.[2]

In this century, German orientalists relied on the manuscripts of Guillaume Postel (1510–1581 CE) in their study of Eastern languages. Notable among them was Jacob Christmann (1554–1613 CE), who established a chair for the Arabic language at the University of Heidelberg. He recognized the close connection between Arabic and other sciences such as medicine and astronomy, translating *The Book of Astronomy* by Ahmad ibn Kathir al-Farghani (d. 347 AH), compiling a brief catalog of Arabic manuscripts acquired by a German nobleman during that period, writing a treatise on teaching Arabic script, and collecting some verses of the Gospel translated into Arabic for reading practice.[3]

In the seventeenth and eighteenth centuries, Johann Jacob Reiske (1716–1774 CE) devoted his life to learning Arabic and studying the history of Islamic civilization. He wrote a general study on Islamic history, published excerpts from *Majma' al-Amthal* by al-Maydani, part of the *Diwan* of al-Mutanabbi, and edited the *Mu'allaqa* of Tarafa ibn al-'Abd with the commentary of Ibn al-Nahhas.[4]

By 1818, the University of Bonn was founded, and Wilhelm Freytag Georg was appointed professor of Eastern languages. He produced an Arabic–Latin dictionary still in use in academic circles, edited and published *Diwan al-Hamasah* by Abu Tammam with al-Tabrizi's commentary and translated it into Latin, published *Al-Burda* by Ka'b ibn Zuhayr with a Latin translation, and issued a manuscript on the description of Palestine and the Levant by al-Sharif al-Idrisi, as well as *Mu'jam al-Buldan* by Yaqut al-Hamawi in six volumes with indexes and appendices.[5]

Heinrich Leberecht Fleischer (d. 1888 CE) founded the German Oriental Society, modeled after the French Asiatic Society and the Royal Asiatic Society of Great Britain. Many of his students were active in it, dedicating themselves to the scientific study of Arabic heritage, publishing its treasures, and continuing research in institutes and universities. It issued periodicals, held annual academic seminars, and contributed to publishing major works, such as Ibn Ya'ish's commentary on *Al-Mufassal* (d. 643 AH), Ibn 'Aqil's commentary on the *Alfiyyah* (d. 769 AH), and a translation of *Kitab Sibawayh* (d. 180 AH) with al-Sirafi's commentary (d. 368 AH).[6]

The German Oriental Society also established branches named Institutes of Oriental Antiquities, Institutes of Oriental Studies, and specialized libraries.

In Istanbul, Hellmut Ritter (d. 1971 CE) founded the Islamic Library for German Orientalists in 1918, focusing on editing Islamic—especially Arabic—texts. Its publications reached twenty-three books, including *Al-Wafi* by Salah al-Din al-Safadi (d. 764 AH) and *Mashahir 'Ulama' al-Amsar* by Muhammad ibn Hassan al-Dhabi (d. 230 AH).[7]

2. Franz Rosenthal:

Franz Rosenthal (d. 2003 CE) was a German-American orientalist of global renown, whose extensive contributions to the study of Arabic language, literature, and Islamic history had a significant impact on Orientalist scholarship.

He was born in Berlin, Germany, to a Jewish family in 1914. He joined the University of Berlin in 1932, studying classical and Eastern languages and civilizations. His professors included Carl Heinrich Becker, Richard Rudolf Walzer, and Hans Heinrich Schaeder. He earned his doctorate in 1935 with a dissertation on Palmyrene inscriptions under Schaeder's supervision.

Rosenthal left Germany in December 1938, moving to Sweden, then England, before relocating to the United States in 1940 to join the Hebrew Union College in Cincinnati, Ohio. He became a U.S. citizen in 1943 and worked during the war translating Arabic for the Office of Strategic Services in Washington.

After the war, he returned to Hebrew Union College, later joining the University of Pennsylvania in 1948 to teach Arabic. In 1956, he was appointed professor of Semitic languages at Yale University, where he remained until becoming professor emeritus in 1985. He died in 2003.

3. His Works in Arabic and Islamic Studies:

Rosenthal's works were characterized by prolific output, variety of subjects, and depth of analysis, all driven by a desire to understand Arabic language, literature, and Islamic history.

In history, he edited Ibn Khaldun's *Muqaddimah* (d. 808 AH) and published it in three volumes, most recently issued in 2022 by Markaz Turath for Research and Studies, translated by Ahmad al-Adawi.

In the first section of the work, he examined Ibn Khaldun's biography and key stages of his life, especially his political career in both the Maghreb and the Mashriq during a critical political period. The second section discussed the content of the *Muqaddimah*, while the third dealt with the text's history, the manner in which Ibn Khaldun composed it, and a study of several manuscripts he personally examined. Rosenthal also reviewed editions of the *Muqaddimah* in both the Arab and European worlds critically, addressing earlier translations in various languages and explaining his reasons for producing a new translation.

In addition, he authored *A History of Muslim Historiography*, translated by Salih Ahmad al-'Ali and reviewed by Muhammad Tawfiq Husayn, published by Maktabat al-Muthanna in Baghdad in 1963 in cooperation with the Franklin Printing and Publishing House. This work examined various historical texts, including:[8]

- *Al-Mukhtasar fi 'Ilm al-Tarikh* by al-Kafiji (d. 879 AH)
- *Al-I'lan bi-l-Tawbikh liman Dhamma al-Tarikh* by al-Sakhawi (d. 902 AH)
- *Al-Jawahir wa-l-Durar* by al-Sakhawi
- An excerpt from *Al-Qawl al-Munbi 'an Tarjamat Ibn 'Arabi* by al-Sakhawi
- *Inba' al-Ghumr bi-Abna' al-'Umr* by Ibn Hajar (d. 852 AH)
- A chapter from *Miftah al-Sa'adah wa-Misbah al-Siyadah* by Tash Kubri Zadah (d. 968 AH)

On research methodology, Rosenthal presented *The Methods of Muslim Scholars in Scientific Research*, covering topics such as documentation and memorization, manuscript hunting, rules for correcting texts and respecting narration, collation, marginalia problems, forgery and literary theft, and many other subjects.[9]

His book *Knowledge Triumphant: The Concept of Knowledge in Medieval Islam* discusses in its first chapter, "Knowledge Before Knowledge," that little can be said about knowledge in pre-Islamic Arabia, where an initial concept of knowledge as the gradual acquisition of material information existed. Over time, this was replaced—or merged—with the idea of knowledge as varying degrees of perception, and eventually the view of knowledge as the highest and truest form of truth emerged. When the Prophet Muhammad ﷺ came, he shaped the concept into a fundamental tool and a divine revelation goal, paving the way for the sanctity of knowledge, which became a hallmark of Islamic civilization.[10]

In the second chapter, "Knowledge in the Revelation," Rosenthal emphasizes that doubts about knowledge vanish when approaching the Qur'an, which he describes as truly the bright light of history. He notes that the Prophet's concept of knowledge set Islamic intellectual life on a path from which it never deviated, with later influences rarely adding new ideas to the Prophet's intellectual framework or changing its course.

In the third chapter, "The Word 'Ilm," Rosenthal observes that in Islamic literature it is often difficult to determine whether the term refers to both worldly and religious knowledge, or religious knowledge alone; likewise, whether it means abstract knowledge or a specific branch of learning. He notes that for Muslims, such distinctions rarely held the same importance as they did for non-Muslims, which is a distinctive feature of the Muslim concept of knowledge and their view of its singular form as truly representing abstract knowledge.

In Chapter Four, "Definitions of Knowledge," he saw that definitions and examples held a significant place in Islam, in agreement with the ancient and simple Arab concept of knowledge. They were needed both in philosophy and in philology. Sufism, with its constant commissioning of terms for meanings and meanings for terms, was especially fond of them. Such definitions always provide a useful review of the various prevailing opinions on any given issue. Explanation and elaboration are necessary to understand these definitions correctly, yet they often remove the haze of confusion that arises from trivialization, presenting many definitions of knowledge in Islamic thought.

As for Chapter Five, "Knowledge is Islam (Theology and Religious Knowledge)," he saw that the modern treatment of knowledge served two purposes: the first—and more important—was to clarify the correct method and teaching approaches to be followed in the study of hadiths, and the second was to highlight the essential relationship between knowledge and faith in the true religion, since knowledge was considered an essential part of it. For scholars of hadith, knowledge was the key to both theorizing and practice in Islam. He added that knowledge and faith were equated in the Qur'an, yet later generations of Muslim thinkers did not neglect to delve into and debate this equality, as it was necessary to verify whether knowledge and faith truly corresponded, and to define the best way to describe the relationship between them. This involves a debate between rational or materialist modes of knowledge and understanding, and irrational or metaphysical ones. In his view, the divine attribute of knowledge, as well as the two names "ʿAlīm" (All-Knowing) and "ʿĀlim" (Knower) among the Most Beautiful Names of God, cannot be separated from His other attributes and names.

In Chapter Six, "Knowledge is Light (Sufism)," the author found it easy to sense the authority of the concept of knowledge in the works of Ibn ʿArabī, as in Sufism as a whole. Despite the Sufis' opposition to both juristic and theological thought and their views on knowledge, and their rejection of any rational definition of knowledge, they found themselves, throughout their history, obliged in one way or another to revere both, and also to view Sufism primarily as a methodological science, with other aspects such as gnosis and enlightenment coming second.

Rosenthal then addressed in Chapter Seven, "Knowledge is Thought (Philosophy)," the duality of theology and the Sharia, concluding that both were pillars of Islam, and that it could be said theology and the Sharia laid down the structural boundaries that distinguished Muslim society from others. What is noteworthy is that both were considered, above all, sciences, and that people chose to add the word "ʿilm" (knowledge) to each. Scholars—in the view of the representatives of theology and the Sharia first, and of Muslims in general later—were those belonging to the educated classes, who regulated the religious affairs and the civil aspects of political life. Yet this was not merely knowledge of facts, but knowledge based on a demonstrable epistemic foundation.

Rosenthal also stated in Chapter Eight and final chapter, "Knowledge is Society (Literature)," that the relationship between knowledge and action, and its effects on the life of the individual, represents the true measure of the value of any society. Another relationship that shapes human civilization, more formal and more narrowly defined, is that between knowledge and education. This relationship in Islam is characterized by a combination of knowledge and literature on one hand, and of knowledge, teaching, and study on the other. Knowledge was considered the result of study and education in all its aspects. Therefore, it was expected that knowledge, and also the root ʿ-l-m, would be central to systematic educational writings in Islam. The influence of knowledge on literary works is not entirely clear, owing to the broad range of meanings of the word "adab" itself. The man of letters was the educated man; what matters here is to what extent this equated to "knower" or "scholar."

In addition, there are other works of his related to the Arab and Islamic heritage. Their titles are:

- The Concept of Freedom in Islam before the 19th Century
- The Translation of al-Ṭabarī's History into English
- A Study on Humor and Jokes in Early Islam
- Hashish in Medieval Islamic Society
- Sweeter than Hope: Complaint and Hope in Medieval Islam
- Gambling in Islam
- Suicide in Islam
- The Individual versus Society in Islam

4. Between Rosenthal and Chomsky:

As previously mentioned, Franz Rosenthal studied under many professors at the University of Berlin, including Carl Heinrich Becker, Richard Rudolf Walzer, and Hans Heinrich Schäder. When he settled in America, he began teaching Arabic. Many researchers have mentioned that Noam Chomsky became acquainted with Arabic grammar through his studies with Rosenthal. We can list these testimonies as follows:

4.1. Mazen al-Waʿr's Interview:

Mazen al-Waʿr conducted an interview with Chomsky on January 31, 1980, and sent its text for publication in the Algerian Linguistics Journal. He mentioned among the reasons for sending what he had recorded from this interview that he had heard ʿAbd al-Raḥmān al-Ḥāj Ṣāliḥ (d. 2017), when he was a student of his at the University of Damascus, say that Chomsky was somewhat influenced by the Arab linguistic tradition.

The fifth question in this interview was about Chomsky's view of the efforts of Arab linguists in linguistics in earlier times. Chomsky replied: "Before I began studying general linguistics, I worked on some research related to Semitic linguistics. I still remember studying the *Ājurrūmiyya* many years ago—I think more than thirty years—and I studied this with Professor Franz Rosenthal."[11]

4.2. ʿAbd al-Raḥmān al-Ḥāj Ṣāliḥ's Testimony:

ʿAbd al-Raḥmān al-Ḥāj Ṣāliḥ delivered a paper at a symposium on the development of linguistics in the Arab world organized by UNESCO in Rabat from April 1 to 11, 1987. The paper is included in his book *Research and Studies in Arabic Linguistics*, in which he confirmed that Chomsky received his knowledge of the Arabic language from Rosenthal, saying: "We must draw the attention of our fellow linguists to the fact that [Chomsky] learned much about Arab linguistic theories and concepts, through his study of Hebrew grammar as formulated by Jewish rabbis in the Middle Ages, as well as through his study of the *Ājurrūmiyya* with his teacher Rosenthal."[12]

4.3. Ḥilmī Khalīl:

Ḥilmī Khalīl (d. 2010), in his translation of John Lyons' *Chomsky's Linguistic Theory*, conveyed Chomsky's statement mentioned by Mazen al-Waʿr in his previous interview[13], and in turn confirmed Chomsky's close association in his youth with the Arabic language and its grammar, just as he was closely connected with the Hebrew language.

4.4. ʿAbduh al-Rājiḥī's Lecture:

ʿAbduh al-Rājiḥī (d. 2010) gave a public lecture at the Literary Club in Riyadh, in which he mentioned Chomsky's influence by Arabic grammar. This prompted Ḥamza Qablān al-Muzainī to contact Chomsky. Al-Muzainī, a

professor of linguistics at King Saud University in Riyadh, had made scholarly efforts in translating Chomsky's works into Arabic. He published the correspondence in *Al-Riyadh* newspaper.

Al-Muzainī said: I sent him a letter asking about what I had heard from Dr. ʿAbduh al-Rājiḥī, who confirmed in a public lecture at the Literary Club in Riyadh that Chomsky had studied Arabic grammar, and that—in al-Rājiḥī's view—he had studied Sībawayh's *Kitāb*, and read the studies of the German linguist von Humboldt, who knew Arabic grammar. Al-Rājiḥī also confirmed that there was an Arab researcher, Dr. Yūsuf ʿAwn, who taught Chomsky Sībawayh's *Kitāb*.

Chomsky responded to al-Muzainī's questions in a letter dated May 28, 1989, saying in the part relevant to this topic:

"You ask about the influence of traditional Arabic grammar on my method of studying language. Most of what you have heard is partially correct, except for that which concerns von Humboldt, whose works I did not read until the 1960s. My father was a scholar of medieval Hebrew grammar, and he produced the standard edition of the grammar book authored by [the Andalusian Jewish grammarian] David Qimḥi. I was well acquainted in my early youth with my father's works, and at that time I also studied a little of the historical studies on the grammar of Semitic languages. The influence of Arabic grammar [on Hebrew grammar] was great, as is well known. This context had a direct and significant influence on my early studies. In fact, my undergraduate and master's theses, which I completed at the University of Pennsylvania on the morphophonemic systems of Modern Hebrew, were greatly influenced by these studies, and were partly modeled on concepts taken from historical Semitic linguistics and traditional grammar. These two theses were the earliest models of contemporary generative grammar, although they were not published until years after they were completed.

When I entered the University of Pennsylvania in 1945, I immediately began studying Arabic with Giorgio Levi Della Vida, who was a very distinguished Arabist. After Della Vida retired, I studied with Franz Rosenthal. With Rosenthal I took one semester of Arabic, and I was the only student in that class. In it, I studied with him Sībawayh's *Kitāb*, and perhaps this is the basis of the rumor you heard [that someone taught Chomsky Sībawayh's *Kitāb*]. Zellig Harris, under whom I studied [linguistics], had completed his major works in historical Semitic linguistics, and I had also studied what he wrote on this subject. It is always difficult to trace such matters precisely, but there are certainly strong possibilities for such influence."[14]

Chomsky also wrote to him in a letter dated December 17, 1990, after al-Muzainī had sent him a copy of the translation of his book *Language and Problems of Knowledge*, including the following text:

"Although in an early period of my life I knew enough Arabic to be able to understand what was published in a newspaper or novel (my actual study, however, was limited to pre-Islamic poetry and the grammatical works written in the eighth century CE [second century AH]; perhaps here I am referring to Sībawayh's *Kitāb*), that was forty years ago, and now I do not trust my knowledge [of Arabic]. But I will lend the book [the translation] to one of my colleagues or friends [to read it]."

We note in this interview Chomsky's mention of Sībawayh's *Kitāb*, without mentioning the *Ājurrūmiyya* as in Mazen al-Waʿr's interview, and between the two interviews—clearly—nine years had passed. Al-Muzainī posted on the X platform on September 5, 2019: "Today I sent a message to Chomsky asking him about what was stated in the interview by the late Mazen al-Waʿr, published in the Algerian Linguistics Journal, in which Chomsky was quoted as saying that he studied the *Ājurrūmiyya* with Rosenthal. He replied that this was not true and that he had not studied the *Ājurrūmiyya*, but had studied Sībawayh for four months with Rosenthal."[15]

In any case, these testimonies as a whole indicate, in general, Chomsky's familiarity with the efforts of Arab grammarians on one hand, and on the other, they confirm Rosenthal's standing and skill in Arabic studies. Whether he taught the *Ājurrūmiyya* as in Mazen al-Waʿr's account, or Sībawayh's *Kitāb* as in Ḥamza al-Muzainī's account, both indicate the extent of Rosenthal's familiarity with the issues of Arabic grammar.

Conclusion:

This study arrived at the following results:

• The sixteenth century CE was the most important stage in the history of German Orientalism, as Oriental studies witnessed clear interest through the scholarly efforts of German figures who played a foundational role in these studies, and who were known as the professors of Oriental languages.

• Franz Rosenthal accomplished many and diverse works in various fields. He edited and published Ibn Khaldun's *Muqaddimah* in three volumes, and authored a book titled *A History of Muslim Historiography*, translated by Saleh Ahmad Al-Ali, revised by Muhammad Tawfiq Hussein, and published by Al-Muthanna Library in Baghdad in 1963 in cooperation with the Franklin Printing and Publishing Institute.

• In the field of research methodology, he presented his book *The Methods of Muslim Scholars in Scientific Research*, in which he addressed various topics such as documentation and preservation, the search for manuscripts, the ethics of text editing and respect for narration, collation, the problem of marginalia, forgery, and literary plagiarism.

• As for his book *Knowledge Triumphant: The Concept of Knowledge in Medieval Islam*, Rosenthal discussed knowledge in the Arabian Peninsula before Islam, then knowledge in the Qur'an, the relationship between knowledge and faith, its relation to philosophy and literature, and concluded the book with a discussion of knowledge in the educational process.

• Rosenthal rendered great service in introducing the Western world to the Arab heritage in the fields of literature, history, and philosophy. Perhaps his greatest contribution was linking American researchers to the Arabic language, foremost among them Noam Chomsky.

Acknowledgment

The author extends sincere gratitude to the Department of Arabic Language and Literature at Blida 2 University, Algeria, for its academic support and intellectual encouragement during the preparation of this research.

Conflict of Interest

The author declares that there are no conflicts of interest associated with this study.

Funding

This research did not receive any external funding.

Ethical Considerations

The study is based on secondary literature review and textual analysis. It does not involve human participants, personal data, or experimental procedures, and thus complies with the highest academic ethical standards.

References

1. Al-Ayoubi, H. I. (1994). Arab research in the Festschrift for the German Orientalist Wolfdietrich Fischer (1st ed.). n.p.
2. Al-Hajj Saleh, A. (2007). Research and studies in Arabic linguistics. Mouffam for Publishing.
3. Rosenthal, F. (2019). Knowledge triumphant: The concept of knowledge in medieval Islam (Y. Al-Qaqaa & I. Al-Qannawah, Trans.; 1st ed.). Arab Center for Research and Policy Studies.
4. Rosenthal, F. (1963). A history of Muslim historiography (S. A. Al-Ali, Trans.). Al-Muthanna Library & Franklin Printing and Publishing Institute.
5. Rosenthal, F. (n.d.). The methods of Muslim scholars in scientific research (A. Freihat, Trans.). Dar Al-Thaqafa & Franklin Printing and Publishing Institute.

6. Abdel-Raouf, M. A. (2004). The efforts of orientalists in Arab heritage between editing and translation (E. A. Jalal, Ed.; 1st ed.). Supreme Council of Culture.
7. Al-Aqeeki, N. (2006). The orientalists. Dar Al-Maaref.
8. Lyons, J. (1985). Chomsky's linguistic theory (H. Khalil, Trans.; 1st ed.). Dar Al-Ma'rifa Al-Jami'iyya.
9. Al-Waer, M. (1982). On some controversial issues in generative and transformational grammar theory. Linguistics Journal, University of Algiers, (6), 45–68.
10. Fück, J. (2001). The history of the orientalist movement (O. L. Al-Alam, Trans.; 2nd ed.). Dar Al-Madar Al-Islami.
11. Chomsky, N. (1965). Aspects of the theory of syntax. MIT Press.
12. Chomsky, N. (1986). Knowledge of language: Its nature, origin, and use. Praeger.
13. Chomsky, N. (1995). The minimalist program. MIT Press.
14. Versteegh, K. (1997). The Arabic linguistic tradition. Routledge.
15. Versteegh, K. (2014). Arabic linguistics. Edinburgh University Press.
16. Kouloughli, D. E. (2007). Introduction to Arabic linguistics. Peeters Publishers.
17. Weiss, B. (1992). The spirit of Islamic law. University of Georgia Press.
18. Gutas, D. (1998). Greek thought, Arabic culture: The Graeco-Arabic translation movement in Baghdad and early Abbasid society (2nd–4th/8th–10th centuries). Routledge.
19. Hourani, A. (1991). A history of the Arab peoples. Harvard University Press.
20. Said, E. W. (1978). Orientalism. Pantheon Books.
21. Said, E. W. (1994). Culture and imperialism. Vintage Books.
22. Walzer, R. (1962). Greek into Arabic: Essays on Islamic philosophy. Oxford University Press.
23. Landau, J. M. (2016). Modern Arabic literature and the West. Routledge.
24. Menocal, M. R. (2002). The ornament of the world: How Muslims, Jews, and Christians created a culture of tolerance in medieval Spain. Little, Brown & Company.
25. Von Grunebaum, G. E. (1964). Modern Islam: The search for cultural identity. University of California Press.
26. Irwin, R. (2006). For lust of knowing: The orientalists and their enemies. Allen Lane.
27. Hodgson, M. G. S. (1974). The venture of Islam: Conscience and history in a world civilization (Vols. 1–3). University of Chicago Press.
28. Brockelmann, C. (1943). History of the Arabic written tradition. Brill.
29. Makdisi, G. (1981). The rise of colleges: Institutions of learning in Islam and the West. Edinburgh University Press.
30. Rabin, C. (1951). Ancient West-Arabian. Taylor's Foreign Press.

Footnotes:

[1] Al-Aqeeki, Najeeb. Al-Mustashriqoon (The Orientalists), Dar Al-Maaref, Cairo, 2006, p. 340
[2] Al-Ayoubi, Hashem Ismail. Arab Research in the Festschrift for the German Orientalist Wolfdietrich Fischer, 1st ed., (n.p., 1994), p. 11.
[3] Abdel-Raouf, Mohamed Awni. The Efforts of Orientalists in Arab Heritage between Editing and Translation, prepared for publication by Eman Al-Saeed Jalal, Supreme Council of Culture, Cairo, 1st ed., 2004, p. 23.
[4] Ibid., p. 25
[5] Ibid., p. 26
[6] Johann Fück. The History of the Orientalist Movement, trans. Omar Lotfi Al-Alam, Dar Al-Madar Al-Islami, Beirut–Lebanon, 2nd ed., 2001, pp. 174, 253.
[7] Ibid.
[8] See: Rosenthal, Franz. A History of Muslim Historiography, trans. Saleh Ahmed Al-Ali, Al-Muthanna Library, Baghdad, in cooperation with the Franklin Printing and Publishing Institute, 1963, p. 317 ff.
[9] See: Rosenthal, Franz. The Methods of Muslim Scholars in Scientific Research, trans. Anis Freihat, Dar Al-Thaqafa, Beirut, in cooperation with the Franklin Printing and Publishing Institute, 1961.
[10] See: Rosenthal, Franz. Knowledge Triumphant: The Concept of Knowledge in Medieval Islam, trans. Yahya Al-Qaqaa and Ikhlas Al-Qannawah, Arab Center for Research and Policy Studies, 1st ed., 2019, p. 23 ff.
[11] Al-Waer, Mazen. On Some Controversial Issues in Generative and Transformational Grammar Theory, article published in Linguistics Journal, University of Algiers, no. 6, 1982, p. 72.
[12] Al-Hajj Saleh, Abdulrahman. Research and Studies in Arabic Linguistics, Mouffam for Publishing, Algeria, 2007, vol. 1, p. 215.

[13] Lyons, John. Chomsky's Linguistic Theory, trans. Helmy Khalil, Dar Al-Ma'rifa Al-Jami'iyya, Alexandria, 1st ed., 1985, p. 13.
[14] Al-Riyadh newspaper, issue dated May 28, 1989.
[15] Tweet published on September 5, 2019, at 9:33 PM.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Strengthening Faculty Performance through Digital Pedagogical Training: A Comprehensive Case Study of the 2023 Cohort of Recruited University Professors in Algerian Higher Education

Blal Fatima Zahra
Doctor
University of Tissemsilt
Algeria
E-mail: fatima.blal@univ-tissemsilet.dz | Orcid: https://orcid.org/0009-0004-0336-5096

Ferroudji Nouh
Doctor
University of Batna 1 – Hadj Lakhdar
Algeria
E-mail: Nouh.ferroudji@univ-batna.dz | Orcid: https://orcid.org/0009-0007-7597-2444

Dey Sarra
Doctor.
University of Batna 1 – Hadj Lakhdar
Algeria
E-mail: Sarra.dey@univ-batna.dz | Orcid: https://orcid.org/0009-0008-8190-2538

Bouadma Aouda
Doctor.
University of Tissemsilt
Algeria
E-mail: aouda.bouadma@univ-tissemsilt.dz | Orcid: https://orcid.org/0009-0006-5632-169X

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Distance training, University professors, Faculty development, Higher education, ICT in education, Algeria, Blended learning, TPACK, Community of Inquiry.

Abstract

This paper examines the role of distance training in enhancing the professional and pedagogical performance of university professors, focusing on the 2023 cohort of newly recruited faculty members in Algeria. Against the backdrop of the country's growing commitment to digital transformation in higher education, the study explores how structured online training initiatives contribute to faculty development, teaching innovation, and institutional capacity-building. Adopting a descriptive-analytical methodology combined with a case study design, the research draws on mixed data sources including structured surveys (N = 320), semi-structured interviews (N = 18), and document analysis of digital training portfolios.

The findings demonstrate that distance training had a measurable impact on teaching competencies, particularly in the integration of information and communication technologies (ICTs) such as Moodle, Edunext, Opale, and VUE. Participants reported improved digital literacy, greater confidence in course design, and enhanced skills in both formative and summative assessment. The initiative also fostered reflective practice through digital portfolios, strengthened collaboration among faculty, and introduced pedagogical frameworks such as Technological Pedagogical Content Knowledge (TPACK) and the Community of Inquiry (CoI).

While the study acknowledges challenges related to infrastructural disparities, varying levels of engagement, and occasional resistance to technological change, it concludes that distance training offers a scalable, cost-effective, and sustainable model for continuous faculty development. The paper underscores the need for stronger institutional investment in digital ecosystems, structured mentorship opportunities, and alignment of training

objectives with global standards in higher education pedagogy.

Citation. Blal F. Z., Ferroudji, N., Dey, S., & Bouadma, A. (2025). Enhancing University Professors' Performance through Distance Training: A Case Study of the 2023 Recruits in Algerian Higher Education. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 825–834. https://doi.org/10.56352/sei/8.11.73

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 17.02.2025 | Accepted: 22.05.2025 | Published: 14.09.2025 (available online)

1. Introduction

The landscape of higher education is undergoing profound transformation driven by digital innovation, globalization, and shifting societal expectations. In this dynamic environment, continuous professional development has become essential for university professors to maintain pedagogical relevance and academic excellence (Al-Maghribi, 2020). Traditional face-to-face training methods are increasingly being supplemented—or replaced—by flexible, technology-mediated alternatives, particularly distance training , which enables educators to acquire new competencies regardless of time or location constraints.

In Algeria, the Ministry of Higher Education and Scientific Research launched a comprehensive distance training program in 2023 targeting newly recruited professors. This initiative aimed to bridge gaps in digital pedagogy, enhance teaching quality, and promote equitable access to professional development across geographically dispersed institutions. Leveraging platforms such as Moodle, Edunext, and Mooc, the program offered structured workshops on instructional design, blended learning, and educational technology integration.

While promising, the effectiveness of such large-scale digital interventions depends on multiple factors: curriculum design, platform usability, learner engagement, institutional support, and alignment with theoretical foundations of adult learning and online instruction. Therefore, evaluating the impact of this training on professors' performance is critical not only for refining current practices but also for informing future policy and strategic planning in Algerian higher education.

This paper presents a systematic evaluation of the 2023 national distance training program for new faculty members. It examines its objectives, implementation, outcomes, and challenges while offering evidence-based recommendations for enhancing faculty development in digitally mediated environments. The remainder of this article is structured as follows: Section 2 outlines the research problem and sub-questions; Section 3 discusses the significance and objectives of the study; Section 4 details the methodology; Section 5 provides a robust theoretical framework; Section 6 defines key concepts; Section 7 describes the training program; Section 8 presents results and discussion; Section 9 offers conclusions, limitations, implications, and directions for future research.

2. Research Problem

The central research question guiding this study is:

How does distance training contribute to improving the performance of newly recruited university professors in the Algerian higher education system?

To address this overarching question, the following sub-questions were formulated:

1. What are the primary components and structure of the distance training workshops provided to new university professors?
2. What pedagogical approaches and digital tools are employed in delivering these training programs?
3. To what extent does distance training enhance professors' pedagogical and technical competencies?
4. How does participation in distance training influence research productivity and professional identity?
5. What barriers hinder the scalability and effectiveness of distance training, and what strategies can overcome them?

3. Significance and Objectives of the Study

3.1 Significance

This study contributes to the growing body of literature on faculty development in low- and middle-income countries where digital transformation in higher education remains uneven. By analyzing a nationally coordinated training initiative, it offers practical insights into:
- The feasibility of scaling up distance training in resource-constrained contexts.
- The role of ICT in promoting inclusive and lifelong learning for academics.
- The alignment of training content with 21st-century teaching demands.

Findings can inform policymakers, university administrators, and instructional designers in developing sustainable models for faculty capacity building.

3.2 Research Objectives

The study aims to:
- Examine the design and delivery of the 2023 distance training program for new university professors in Algeria.
- Evaluate its impact on participants' pedagogical performance and digital competence.
- Identify challenges encountered during implementation.
- Propose actionable recommendations for improving future iterations of faculty development programs.

4. Research Methodology

This study adopts a mixed-methods descriptive-analytical approach , combining quantitative and qualitative data to provide a comprehensive understanding of the training intervention.

4.1 Research Design

A convergent parallel mixed-methods design was used, allowing simultaneous collection and integration of both datasets (Creswell & Plano Clark, 2017). The case study focuses on the cohort of newly recruited professors who participated in the 2023 training cycle.

4.2 Population and Sample

- Target population : All newly recruited university professors in Algeria (N ≈ 1,200).
- Survey sample : 320 participants selected via stratified random sampling across ten public universities.
- Interview sample : 18 individuals (15 professors, 3 trainers) chosen through purposive sampling to ensure diversity in discipline and region.

4.3 Data Collection Tools

1. Online questionnaire : A 25-item Likert-scale survey assessing perceived improvements in:
   - Digital tool proficiency
   - Lesson planning
   - Assessment design
   - Student engagement
   - Collaborative practices
2. Semi-structured interviews : Conducted virtually, focusing on lived experiences, challenges, and suggestions.
3. Document analysis : Review of 45 training portfolios submitted by participants, evaluating completeness, creativity, and application of learned skills.

4.4 Data Analysis

- Quantitative data were analyzed using SPSS v28 , generating descriptive statistics (frequencies, means, standard deviations) and inferential tests (paired t-tests to compare pre- and post-training self-assessments).
- Qualitative data were thematically coded using NVivo 14 , identifying recurring patterns related to effectiveness, engagement, and obstacles.

4.5 Ethical Considerations

Participation was voluntary and anonymous. Informed consent was obtained electronically. Data were stored securely and used solely for research purposes.

5. Theoretical Framework

This study is grounded in three interrelated theoretical perspectives that explain how distance training influences faculty development:

5.1 Technological Pedagogical Content Knowledge (TPACK)

Mishra and Koehler's (2006) model emphasizes the intersection of technology, pedagogy, and subject matter knowledge. The training program explicitly targeted all three domains:

- Technological Knowledge (TK) : Mastery of Moodle, Opale, VUE.
- Pedagogical Knowledge (PK) : Designing interactive lessons and assessments.
- Content Knowledge (CK) : Application in disciplinary contexts (e.g., desert agriculture lesson).

By fostering TPACK integration, the training enabled professors to make informed decisions about when and how to use technology effectively in their teaching.

5.2 Community of Inquiry (CoI) Framework

Garrison et al.'s (2000) CoI model posits that meaningful online learning arises from the interaction of:

- Teaching presence (facilitated by mentors),
- Social presence (promoted through group work and forums),
- Cognitive presence (developed via problem-solving and reflection).

The training activities—particularly collaborative tasks and peer feedback—supported all three presences, enhancing engagement and deep learning.

5.3 Self-Determination Theory (SDT)

Deci and Ryan's (1985) theory highlights intrinsic motivation driven by autonomy, competence, and relatedness. The asynchronous nature of the training supported autonomy ; skill acquisition enhanced competence ; and group interactions nurtured relatedness , collectively boosting motivation and persistence.

These frameworks collectively justify the program's design and help interpret its outcomes.

6. Key Concepts

6.1 Distance Training

Distance training refers to an educational modality where learners and instructors are separated spatially and/or temporally, connected through information and communication technologies (Fakhri, 2013). It allows flexible, self-paced learning accessible anytime and anywhere (Sofiane, 2019). Unlike traditional training, it relies on digital platforms to deliver content, facilitate interaction, and assess progress.

6.2 University Professor and Academic Performance

A university professor is a scholar entrusted with teaching, research, and service responsibilities (Braun, 2023). Their performance encompasses measurable contributions to institutional goals through effective teaching, scholarly output, and professional conduct (Ben Hassan, 2019).

6.2.1 Pedagogical Performance

This includes behaviors exhibited during instruction, such as:

- Setting clear learning objectives,
- Employing diverse teaching strategies,
- Using appropriate assessment tools,
- Encouraging student participation (Ben Lakhal, 2023).

6.2.2 In-Service Teacher Training

Defined as ongoing, structured professional development throughout a teacher's career (Heir, 2002; Nazli, 1989), it aims to update knowledge, refine skills, and adapt to changing educational paradigms.

7. Description of the 2023 Training Program

Administered under the strategic vision of the Ministry of Higher Education, the training was coordinated by the

University of Frères Mentouri – Constantine and delivered entirely online between December 2022 and April 2023

7.1 General Objectives

As outlined by Belhani (2023), the program sought to enable professors to:
- Structure pedagogically sound lessons;
- Adopt quality standards in education;
- Organize collaborative academic work;
- Understand principles of distance learning systems;
- Operate Moodle and EdX platforms;
- Design pedagogical videos;
- Integrate ICT into teaching and assessment.

7.2 Training Stages and Workshops

Participants were divided into four cohorts based on availability, each undergoing five sequential workshops.
Each workshop lasted 3–4 days, combining synchronous sessions (live webinars) and asynchronous tasks (assignments, forum discussions).

8. Results and Discussion

Analysis of survey responses, interviews, and portfolios yielded the following findings:

8.1 Enhanced Digital Competency

Over 87% of respondents reported significant improvement in their ability to use digital tools. Notably:
- 92% felt confident navigating Moodle.
- 85% successfully created interactive lessons using Opale.
- 78% applied VUE for visualizing course structures.

"Before the training, I avoided using any platform. Now, I've uploaded three courses on Moodle." — Male Professor, Faculty of Sciences
This aligns with UNESCO (2020), which underscores flexibility and accessibility as core advantages of distance learning.

8.2 Improved Course Design Skills

Participants demonstrated advanced understanding of hybrid lesson architecture. Portfolio reviews showed:
- Clear alignment between objectives, activities, and assessments.
- Use of multimedia elements (videos, infographics).
- Incorporation of formative feedback mechanisms.

Thematic analysis revealed that structured templates and trainer feedback were crucial enablers.

8.3 Shift Toward Student-Centered Teaching

A notable shift from lecture-based to interactive methodologies was observed. Over 75% of interviewees mentioned adopting discussion forums, group projects, and flipped classroom techniques.

This reflects the influence of CoI's teaching presence and cognitive presence , where guided inquiry promotes deeper engagement.

8.4 Development of Evaluation and Feedback Practices

Professors improved in designing rubrics and providing timely, constructive feedback. One participant noted:
"I now see assessment not just as grading, but as a tool for learning improvement."

This supports Ben Ramadan's (2017) view that pedagogical training enhances reflective practice.

8.5 Strengthened Collaboration

Group activities fostered cross-disciplinary exchange. Virtual teams collaborated on shared lessons, leading to joint publications in some cases.

"We formed a network across five universities—we still share resources." — Female Professor, Humanities

8.6 Portfolio as a Tool for Reflective Practice

All participants completed a portfolio documenting their journey. These included lesson plans, reflections, peer feedback, and certificates. Portfolios served as tangible evidence of growth and potential promotion dossiers.

8.7 Exposure to Innovative Tools

Tools like VUE (for concept mapping) and Opale (for multi-format publishing) expanded professors' instructional repertoires beyond PowerPoint and PDFs.

8.8 Promotion of Critical Thinking and Creativity

Designing original lessons required analytical thinking and innovation. Interview data indicated increased confidence in creative problem-solving.

9. Conclusion, Limitations, Implications, and Future Research

9.1 Conclusion

The 2023 distance training program represents a landmark effort in modernizing faculty development in Algeria. Findings confirm that well-structured, technology-integrated training can significantly enhance professors' pedagogical performance, digital fluency, and professional identity. When supported by clear objectives, practical tools, and reflective practices, distance training emerges as a viable, scalable alternative to traditional in-person workshops.

However, success hinges on addressing systemic challenges—including unequal internet access, lack of technical support, and varying levels of digital readiness—through coordinated institutional policies.

9.2 Limitations of the Study

- Self-report bias : Survey data rely on subjective perceptions rather than objective performance metrics.
- Limited generalizability : Findings pertain specifically to the 2023 cohort and may not reflect long-term impacts.
- Sampling constraints : While efforts were made for representativeness, urban universities were slightly overrepresented.
- Lack of control group : No comparison with non-participants limits causal inference.

9.3 Practical and Policy Implications

- Universities should institutionalize annual refresher training in digital pedagogy.
- Investment in reliable internet infrastructure and technical support units is essential.
- Mentorship programs should be integrated into future training cycles.
- Training content must evolve continuously, incorporating AI tools, open educational resources (OER), and accessibility standards.

9.4 Recommendations for Future Research

1. Longitudinal studies tracking changes in actual teaching practices and student outcomes.
2. Comparative analyses between distance and blended training modalities.
3. Investigation into gender, age, and disciplinary differences in technology adoption.
4. Exploration of AI-driven personalized learning paths for faculty development.

Table 1. Structure and Focus of the Distance Training Workshops for Newly Recruited Algerian University Professors (2023 Cohort)

Workshop	Key Activities	Focus	Explanation
1. Introduction to Digital Tools	- Accessing TIC platform - Creating accounts - Using VUE for mind mapping	Foundational ICT skills	This initial workshop introduced participants to the university's digital ecosystem. Professors gained essential ICT

	- Building lessons with Opale (web/print formats) - Hands-on creation of a sample lesson on "Desert Agriculture"		literacy, including account creation, navigation of TIC platforms, and use of software tools such as VUE for conceptual mapping and Opale for lesson design. The sample topic on "Desert Agriculture" provided an applied context for hands-on practice.
2. Designing a Blended Lesson	- Comparing objective-based vs. competency-based learning - Structuring lessons and quizzes - Group activity: designing an assessment grid - Updating Opale lessons with templates	Instructional design	This stage focused on pedagogical structuring of blended lessons. Participants engaged in comparative analysis of instructional models, collaborated on creating assessment grids, and enhanced their digital lessons using Opale templates. The emphasis was on aligning teaching objectives with competency-based approaches.
3. Methodology for E-Learning Courses	- Designing full e-learning courses - Understanding quiz types and sequencing - Watching tutorials on uploading content to Moodle	Course development	Professors advanced to comprehensive course development by exploring sequencing of learning modules and assessment strategies. Tutorials demonstrated the process of uploading content to Moodle, thereby linking instructional design with practical implementation in a widely used LMS.
4. Exploring Online Platforms	- Introduction to Mooc platform - Steps to create a lesson on Mooc - Creating personal spaces on Edunext (Studio & LMS interfaces) - Uploading final lesson designs	Platform mastery	This workshop consolidated technical expertise across platforms. Professors learned to integrate their lesson designs into MOOCs and Edunext, thereby creating scalable, shareable, and interactive digital learning environments. The emphasis was on professional autonomy in online course

			management.
5. Pedagogical Follow-up	- Discussing active learning approaches - Evaluating assessment quality - Clarifying mentor roles - Finalizing lesson plans with feedback from faculty and students - Compiling a professional portfolio	Reflection and mentoring	The concluding workshop fostered reflective practice and mentorship. Professors refined lesson plans based on peer and student feedback, evaluated assessment effectiveness, and compiled professional teaching portfolios. This process supported long-term faculty development and encouraged collaborative improvement.

- This structured training model was designed as a progressive learning pathway, beginning with foundational ICT literacy and culminating in reflective practice and mentorship. Each stage was strategically aligned to pedagogical frameworks (TPACK and Community of Inquiry), ensuring that professors developed not only technical competencies but also critical awareness of instructional design and assessment practices. The integration of practical tasks, peer collaboration, and reflective portfolio development provided a holistic model of professional growth suited for modern higher education environments

Findings

- Improved Teaching Competencies: Survey and interview data confirmed that participants experienced significant growth in lesson planning, course structuring, and classroom management through digital tools. Faculty members became more adept at creating blended learning modules that combined synchronous and asynchronous formats.
- Increased Digital Literacy: The training strengthened professors' ability to navigate educational technologies, particularly learning management systems such as Moodle and Edunext. Professors also reported an enhanced capacity to design interactive learning resources using Opale and VUE software.
- Assessment and Feedback Practices: Professors integrated digital platforms to administer formative assessments, manage quizzes, and provide personalized feedback, which improved student engagement and learning outcomes.
- Reflective Practice through Portfolios: The requirement to maintain digital portfolios encouraged professors to reflect systematically on their pedagogical progress. This reflective practice helped in identifying strengths, addressing gaps, and adopting continuous improvement strategies.
- Collaborative Professional Learning: The distance training created a network of professional collaboration among participants, facilitating peer-to-peer knowledge sharing and the development of communities of practice across Algerian universities.
- Challenges Identified: Despite its successes, the initiative faced barriers such as uneven technological infrastructure across regions, inconsistent participation rates, and initial reluctance among some faculty to embrace digital teaching methodologies.

Acknowledgment

The authors extend their appreciation to the Ministry of Higher Education and Scientific Research of Algeria and to the participating universities for providing access to institutional data and logistical support throughout the

research process.

Conflict of Interest

The authors declare that there are no conflicts of interest associated with this research.

Funding

This study did not receive any external funding. All expenses were covered by the authors.

Ethical Considerations

The study followed ethical guidelines for educational research. Participation in surveys and interviews was voluntary, and informed consent was obtained from all participants. No sensitive personal data were collected, and confidentiality was strictly maintained.

References

1. Abbas, M. (1989). Teacher education and professional development (S. Nazli, Ed.). Cairo: Dar Al-Maaref.
2. Al-Maghribi, T. (2020). E-learning in higher education: Challenges and opportunities. Riyadh: King Saud University Press.
3. Belhani, Z. (2023). Professional development programs for new faculty in Algerian universities: Design and implementation. Constantine: Frères Mentouri University Press.
4. Ben Hassan, H. (2019). Performance management in educational institutions. Tunis: CREDIF.
5. Ben Lakhal, D. (2023). Pedagogical engineering in higher education. Paris: L'Harmattan.
6. Ben Ramadan, M. (2017). Evaluation of teaching performance. Tunis: Publications of the University of Manouba.
7. Braun, E. (2023). The role of the university professor in the 21st century. Berlin: Springer.
8. Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. New York: Plenum. https://doi.org/10.1007/978-1-4899-2271-7
9. Fakhri, A. (2013). Distance education: Concepts and applications. Beirut: Dar Al-Fikr.
10. Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. The Internet and Higher Education, 2(2–3), 87–105. https://doi.org/10.1016/S1096-7516(00)00016-6
11. Heir, M. (2002). In-service teacher training: Principles and practices. Amman: Arab Organization for Education.
12. Hussein, A. (2016). Digital transformation in education. Cairo: Anglo Egyptian Bookshop.
13. Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. Teachers College Record, 108(6), 1017–1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x
14. Nazli, S. (1989). Modern trends in teacher education. Cairo: Dar Al-Maaref.
15. Sofiane, M. (2019). ICT and educational innovation. Algiers: Office du Programme Universitaire (OPU).
16. UNESCO. (2020). Global education monitoring report: Inclusion and education. Paris: UNESCO Publishing. https://doi.org/10.54676/UUYZ7320
17. Anderson, T., & Dron, J. (2011). Three generations of distance education pedagogy. The International Review of Research in Open and Distributed Learning, 12(3), 80–97. https://doi.org/10.19173/irrodl.v12i3.890
18. Bates, A. W. (2015). Teaching in a digital age: Guidelines for designing teaching and learning. Vancouver: Tony Bates Associates Ltd.
19. Biggs, J., & Tang, C. (2011). Teaching for quality learning at university (4th ed.). Maidenhead: Open University Press.

20. Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). Effective teacher professional development. Palo Alto, CA: Learning Policy Institute.
21. Fullan, M., & Scott, G. (2009). Turnaround leadership for higher education. San Francisco: Jossey-Bass.
22. Garrison, D. R. (2017). E-learning in the 21st century: A community of inquiry framework for research and practice (3rd ed.). New York: Routledge.
23. Hattie, J. (2009). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. London: Routledge.
24. Laurillard, D. (2012). Teaching as a design science: Building pedagogical patterns for learning and technology. New York: Routledge.
25. OECD. (2020). The impact of COVID-19 on education: Insights from education at a glance 2020. Paris: OECD Publishing. https://doi.org/10.1787/69096873-en
26. Salmon, G. (2013). E-tivities: The key to active online learning (2nd ed.). New York: Routledge.
27. Schunk, D. H. (2012). Learning theories: An educational perspective (6th ed.). Boston: Pearson.
28. Siemens, G. (2005). Connectivism: A learning theory for the digital age. International Journal of Instructional Technology and Distance Learning, 2(1), 3–10.
29. Trowler, P. (2010). Student engagement literature review. York: Higher Education Academy.
30. Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Cambridge, MA: Harvard University Press.
31. Wang, V. C. X., & Torrisi-Steele, G. (2015). Online teaching, change, and critical theory. Educational Technology & Society, 18(3), 19–29.
32. Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. Theory Into Practice, 41(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Preparing University Teachers for English-Medium Instruction in Algeria: Institutional Challenges, Teacher Perceptions, and Prospects for Sustainable Implementation

Mezhoud Soraya
Doctor
RELTEL / Ecole Normale Supérieure Assia Djebar, Constantine
Algeria
E-mail: mezhoud.soraya@ensc.dz | ORCID: https://orcid.org/0009-0009-2769-2004

Haddad Amina
Doctor
RELTEL / Ecole Normale Supérieure Assia Djebar, Constantine
Algeria
E-mail: haddad.amina@ensc.dz | ORCID: https://orcid.org/0009-0008-9788-0150

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords English as a Medium of Instruction (EMI); Algerian higher education; Teacher training; Language policy; Pedagogical challenges; Teacher perceptions.

Abstract

The adoption of English as a Medium of Instruction (EMI) has emerged as a global trend in higher education, particularly in non-English speaking countries seeking greater academic visibility, student mobility, and international collaboration. Algeria, as part of this global shift, has recently introduced policies encouraging universities to gradually implement EMI across various disciplines. In response, the Ecole Normale Supérieure Constantine (ENSC) initiated a specialized training programme in 2022–2023 to equip university teachers with the linguistic and pedagogical skills necessary to deliver their courses in English.

This study investigates Algerian teachers' perceptions of EMI preparation, focusing on the challenges encountered during training and their expectations for future practice. Data were collected through a structured questionnaire administered to a representative sample of teachers enrolled in the ENSC training programme.

Findings reveal a strong willingness among teachers to embrace EMI due to its professional advantages, including enhanced career opportunities, access to international research networks, and alignment with global academic standards. However, significant challenges were reported, including insufficient prior English proficiency, lack of tailored pedagogical materials, and limited institutional support structures. Teachers also expressed concerns about balancing disciplinary expertise with language development, as well as the risk of compromising content quality during the transition phase.

This research highlights the critical need for a systematic and long-term EMI policy framework in Algeria that combines language training, content-based pedagogy, and institutional incentives. Practical recommendations include the design of context-specific teacher development programmes, integration of English for Academic Purposes (EAP) modules, and sustained institutional backing. The study contributes to regional and international debates on EMI by offering insights into the Algerian context, where the adoption of English represents both a strategic necessity and a pedagogical challenge.

Citation. Soraya M., Amina H. (2025). Preparing University Teachers for English-Medium Instruction in Algeria: Institutional Challenges, Teacher Perceptions, and Prospects for Sustainable Implementation. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 935–943. https://doi.org/10.56352/sei/8.11.74

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open

access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 16.07.2025	Accepted: 20.08.2025	Published: 23.09.2025 (available online)

Introduction

Due to its importance as a global language, using the English language as a medium of instruction in non-English speaking countries has become a popular trend. Because of this, there is a growing demand for content teachers who are proficient in English and who can deliver their courses in this language. Nevertheless, not all content teachers in non-English speaking countries possess sufficient proficiency and the necessary pedagogical skill that enable them to use English as a medium of instruction (EMI). It was necessary, therefore, to develop training programmes to help content teachers in this quest. Algeria is one of the many countries concerned, as the demand for content teachers who can deliver their lessons in English has considerably grown. To help them develop their English proficiency and pedagogical skills so as to use EMI, English language training programmes have been developed. For content subject teachers, however, these programmes pose a variety of difficulties. Many of them, especially those with low proficiency level in English, are wondering if they would be able to deliver their subjects in that language after a limited period of instruction. This paper aims to explore the challenges content teachers in Algeria may face when being trained to use English, with an emphasis on the Ecole Normale Supérieure Assia Djebar – Constantine training programme and eventually to gather suggestions that would help make this operation a success.

1. Efforts to Develop English Language Training Programmes in Algeria

The English language has gained a worldwide predominance and is being perceived as a gate that opens global success opportunities for people who master it. Algerian language practitioners, well aware of the importance of the role played by this language in promoting the quality of education since it is recognized as the language of science and technology (Belmihoub, 2018), have given it due consideration. Many conditions have contributed to its promotion in Algeria, namely the support it has received by the British Council and the American Embassy. Because of the British Council's promotion of the language, which is well-known for coordinating ELT across the globe, English has expanded greatly in Algeria in the same manner it has in other parts of the world (Pennycook, 2016). Also, as a result of the country's growing international business and economic relations with the UK and the USA, the British Council and the American Embassy have greatly extended their sponsorship of language courses and cultural events in Algeria (Belmihoub, 2018). Many training programmes have been offered by these two organizations since the early 1980's to foster the English language skills of both learners and teachers.

2. English in Algerian Higher Education

Concerned with a desire to confer an international dimension to higher education, the Algerian Ministry of Higher Education and Scientific Research has deemed the enhancement of the use of the English language among Algerian higher education institutions a strategic priority. The expressed motive underlying this initiative was to align Algerian universities with global academic standards and promote their competitiveness within the international educational and research communities. In a press conference on the promotion of higher education and scientific research in 2019, the Minister of Higher Education addressed university students in English (*Maghreb Voices, 2019*) and that was a premiere in Algerian history. This marked a significant shift in Algeria's linguistic policy in higher education, traditionally dominated by Arabic and French. In his subsequent communications with the Algerian university community about educational reforms, the Minister used Arabic and English instead of French which used to be predominantly employed by Algerian political figures interchangeably with Arabic. Later in 2019, a national poll was conducted by the Ministry via its website to gauge higher education teachers and students' opinion on the use of English as a medium of instruction. As the results obtained were massively in favor of this initiative, the Algerian Ministry of Higher Education and Scientific Research was prompted to pass policies that promoted English language teaching and gradually integrated it into administrative an academic practice. The policy underlying this initiative required that English, instead of French, be used alongside with Arabic to vehicle any official administrative communication among higher education institutions. As a consequence, official websites of all Algerian universities were updated and began to display their content in English, in addition to Arabic and French.

The Algerian efforts are consistent with worldwide trends which are increasingly considering English as an indispensable tool to access scientific knowledge, collaborate with international peers, and increase employment opportunities. In this respect, Macaro, Curle, Pun, An and Dearden (2018) claim that adopting EMI makes it possible to access global academic resources and to promote students' linguistic and cognitive abilities.

In addition, the adoption of English in Algerian higher education reflects a broader geopolitical and sociolinguistic transition. Accordingly, Benrabah (2020) contends that the promotion of English in Algeria reflects a national effort to modernize the Algerian educational system and at the same time minimize dependence on the French language. Furthermore, Algerian policymakers want to promote the English language to reinforce links with the world's academic community and diversify both students and teachers' linguistic competencies.

3. Benefits of Using EMI

Using EMI has a number of potential benefits, hence the necessity of training higher education teachers to use this language to deliver their courses. Improving the quality of education is one of these benefits as EMI opens access to a large range of knowledge and resources such as academic literature, research, and scholarship (Airey and Linder, 2008). Preparing students for the global workforce is another benefit. Students who master English in addition to intercultural skills are likely to succeed in international contexts because EMI makes it possible for students, as well as teachers, to be in contact with colleagues from other cultures and to develop intercultural competence (Macaro, 2018). Students and teachers from different parts of the world are also offered opportunities for cross-cultural exchange and collaboration thanks to the promotion of internationalization by EMI (Doiz, Lasagabaster and Sierra, 2011). Universities which offer courses in English can attract international teachers and students and by the same token, promote their visibility, international reputation and competitiveness (Jenkins, 2013). Another benefit is that the exposure to authentic and challenging language use through EMI leads both teachers and students to better their English language proficiency (Lasagabaster and Sierra, 2009). Research by some scholars such as (Kirkpatrick, 2012) has also demonstrated that, compared to those who are taught subjects in their native language, students who are instructed through English achieve better academic results.

4. Impact of Language Proficiency on the Effectiveness of EMI

The development of the English language proficiency is one of the major goals of training content subjects teachers to use English. Language proficiency is not only a necessary condition for successful communication in contexts where EMI is used, but it also significantly influences the way in which teachers deliver content and engage their students effectively. In this respect, many studies have attempted to investigate the effect of language proficiency effectiveness of EMI. Brutt-Griffler and Samimy (1999), for example, claim that if teachers want to effectively deliver their courses in English, it is mandatory to have a high level of English proficiency. Another research by Kim and Kim (2018) concluded that content teachers need to have a high English proficiency levels in order to be more confident and effective in teaching their subjects in English. The authors emphasize that teachers' ability to create an interactive and engaging classroom environment is directly impacted by their linguistic competence. Another major aspect of training content teachers to use English is to promote their pedagogical skills in using that language as a medium of instruction. English language programmes often aim at training teachers to employ techniques and strategies that improve linguistic and pedagogical skills to face challenges encountered in EMI. In Spain, for example, Morell, Aleson-Carbonell, and Escabias-Lloret (2023) designed a comprehensive EMI training programme for content teachers at a Spanish university focusing on digital competencies, linguistic proficiency and pedagogical strategies to empower them with effective pedagogical skills in using English to teach their subjects. Workshops on effective teaching strategies, language development, and content delivery constituted the core of this programme, showing a holistic approach to EMI teacher training. The significance of language proficiency was also highlighted by Dearden (2014) who argued that insufficient language skills among content teachers is an important obstacle that faces the worldwide rapidly expanding EMI. The study emphasized that teacher training programmes should give priority to the development of language proficiency in any endeavor at EMI preparation. Likewise, Klaassen (2001) carried out a study that investigated the implementation of EMI inengineering education in the Netherlands and obtained results that emphasized the important role of teachers' English language proficiency. The study concluded that higher proficiency levels significantly improved both the quality of instruction and the teachers' ability to adapt

their teaching methodologies to suit non-English speaking students. In the same vein and in their attempt to systematically review EMI research, Macaro et. al. (2018) found that language proficiency plays a significant role in fostering teachers' confidence and their ability to manage classroom interactions effectively. According to this study, a successful EMI implementation demands both high linguistic proficiency levels and continuous professional development to refine teaching techniques and strategies. All these findings converge with the idea that language proficiency and pedagogical effectiveness in EMI contexts are closely related. Therefore, the integration of language proficiency development in teacher training programmes imposes itself as a necessity when any institution worldwide attempts to implement EMI.

5. Potential Challenges Faced by Algerian University Teachers

Although training university teachers to use EMI has numerous advantages, there are also many potential challenges related to both teachers and students' linguistic proficiency, availability of resources and institutions' readiness to endorse EMI practices. Research on the challenges faced by content subject teachers using EMI worldwide emphasize a number of substantial issues that may affect the success of the teaching/learning process and that may represent potential concerns for Algerian content subject teachers too. Indeed, university teachers may lack the fluency in the language needed to instruct students in English successfully. This is likely to create lack of understanding, miscommunication, and other issues (Jenkins, 2013). The challenges faced by teachers in implementing EMI, particularly lack of institutional support and resources, have been reported in different contexts. For instance, Pun and Thomas (2020) conducted a study focusing on secondary school EMI science teachers in Hong Kong. They identified several issues, including limited English communication skills and lack of EMI training. The study concluded that in order to enhance the quality of EMI programmes, effective support systems for EMI teachers should be guaranteed. Similarly, Macaro, Akincioglu and Han (2020) surveyed EMI teachers across multiple countries, including China, Italy, Japan, Mexico, Spain, and Turkey. Their findings revealed that many EMI teachers were assigned to teach without adequate preparation, highlighting the necessity for comprehensive teacher professional development programmes to support EMI implementation.

Still another challenge is some university teachers' resistance to change. According to Macaro (2018), teachers may perceive the use of another language to teach their subjects as a threat to their identity and to the tradition of teaching in their native language. Resistance to learn in English can even be felt by students, especially if they are not familiar with using English. This can negatively affect their learning outcomes and engender communication breakdowns. Also, as not all students have the same proficiency level in English, EMI can result in educational inequality. Contrary to English speaking students or those with a high proficiency level, students with a low proficiency level in this language may have considerable difficulty to grasp the content and thus be at a disadvantage (Lasagabaster and Sierra, 2009).

In the Algerian context, many studies have been carried out by researchers investigating the difficulties Algerian content teachers are encountering when using EMI. In a survey that collected data from 327 content subject university teachers, Hamane (2023) noted that while they recognise the potential benefits of using EMI, teachers are conscious of the many obstacles too. The latter include:

'language barriers and the comprehension of complex concepts, effective communication between teachers and students in English, the potential impact on student performance, the student's ability to comprehend the language, the potential increase in workload and stress, the scarcity of qualified teachers proficient in English, the potential exclusion of non-English-speaking students, the influence of language on students' confidence and participation, student frustration, and motivation' (Hamane, 531: 2023).

Similarly, using a thirty-one questions survey with thirty-two university educators from three different universities in western Algeria, Menezla and Benghalem (2024) pointed to some issues faced by Algerian university instructors in implementing EMI, namely the linguistic and pedagogical barriers, lack of confidence in teaching in English, the inadequacy of instructional resources, communication difficulties in their classrooms and lack of specialized training in delivering content in English. Ouarniki (2023), on the other hand, adopted a qualitative approach, using semi-structured interviews with ten Algerian teachers, belonging to different universities and fields of specialism. She concluded that the success of EMI in Algerian higher education will highly depend on addressing a set of obstacles including the availability of resources, the quality of training and support provided to teachers, and the willingness of all stakeholders to embrace the changes required. In a related context, Maraf and

Zekri (2023) invstigated the issue of student-teachers' abstention from attending the English training programme at the Centre d'Enseignement Intensif des Langues (CEIL) in Tlemcen and Biskra universities by means of semi-structured interviews with six student-teachers and unstructured interviews with three teachers. The researchers deduced that student-teachers abstain from attending English language classes due to mainly the inconvenience scheduling of the language classes, the proficiency level of the student-teachers, their placement in language classes and their negative attitudes towards the training program and the EMI reform. The findings of the study imply that there would be jeopardy to the success of English-blended instruction in Algerian universities.

All these studies have concluded that the majority of Algerian content teachers lacked the pedagogical knowledge and English language ability needed to teach their topics in English. They call for the necessity that training programmes assist Algerian content teachers in improving their pedagogical and English language abilities. In order to successfully teach their subjects in English, teachers need not only English language proficiency, but also specific pedagogical skills such as knowing how to effectively design and use appropriate materials, assess their students' learning, and promote successful classroom interaction.

6. Methodology

The present study is exploratory in nature, and it involves a mixed-methods design with the aim of delving into teachers' experiences with the English language and shedding light on the challenges they may face during their training in English in preparation to use it as a medium of instruction.

6.1. Research questions

1) What are teachers 'perceptions of their lacks?

2) What are teachers' perceptions of the challenges they might face when using EMI?

3) How to cater for these challenges?

6.2. Background Information about Participants

Before the training was launched, 151 teachers belonging to 8 departments took a placement test that aimed at identifying their proficiency level and placing them in instructional groups accordingly, but only 113 teachers embarked on the English language training. The results obtained by the teachers in the placement test could place them in the following proficiency levels:

Proficiency Level	Number of teachers	Percentage
A1	74	49
A2	33	21.85
B1	34	22.51
B2	09	5.96
C1	01	0.66
C2	00	00
Total	**151**	**99.98%**

Table1: Teachers' English Proficiency Level after the Placement Test

The results displayed in the table above show that half of the teachers have a beginner proficiency level in English. According to the Common European Framework of Reference for Languages (Introductory Guide to the Common European Framework of Reference (CEFR) for English Language Teachers (2013)), people who have this level are able to use and understand familiar everyday expressions and very basic phrases, introduce themselves and others and ask and answer questions about personal information. Other 21.85% of the teachers have an A2 proficiency level which means, according to the same framework, that they can comprehend sentences and use expressions related to relevant information such as basic personal and family information, shopping and local geography. They can also communicate in simple routine tasks that require a simple and direct exchange of information. In addition, 22.51% have a B1 proficiency level, that is, they can understand the main points of a clear standard input. They can produce simple connected texts on familiar and personally relevant topics. They can also describe different experiences and events and give reasons and explanations for opinions. 5.96% (9 teachers) among the whole sample have a B2 proficiency level which denotes their ability to understand the main ideas of a complex text including technical discussions in their field of specialization. They can interact with some degree of fluency and spontaneity, produce clear and detailed text on a wide range of topics and explain a viewpoint on a topical issue. It has to be mentioned at this point that the training aims at leading teachers to achieving a B2 proficiency level and since 9 teachers already had this level, they were not concerned with the training. However, 4 of them were intrinsically motivated to learn English and they decided to pursue the training for the sake of reinforcing their competence. Finally, only one teacher representing 0.66% of the teachers receiving the placement test has a C1 proficiency level. She can understand a wide range of demanding, longer texts and express herself with a relative fluency and spontaneity. She can also use language flexibly and effectively for various purposes and can produce clear, well-structured and detailed texts on complex subjects. However, she decided to go through the training driven by her intrinsic motivation to learn English. As shown in the table, none of the teachers has complete mastery over the English language as 0% of them have C2 level.

6.3. Participants

The population with which this study is concerned is non-English language teachers at the Ecole Normale Supérieure Assia Djebar, Constantine who are required to take a training in English. Using a Simple Random Sampling, a number of 54 teachers representing 47.87%of the ones who received the training in English (n = 113) was selected to complete a mixed-methods questionnaire. Their fields of specialty are Physics and Chemistry, Natural Sciences, Computer Science, Exact Sciences, Arabic Language and Literature, French, History and Geography and Philosophy.

6.4. The Questionnaire

To gather data from the participants, a mixed-methods questionnaire was designed and administered to teachers at the beginning of the English language training. Its main objective is to gather insights into their perceptions of potential challenges and benefits of EMI.To avoid possible misunderstanding, the questionnaire items were written in English; and to make teachers feel at ease answering them, the researchers decided to write them in French. In addition, since it has a well-narrowed objective, and in order to make the teachers answer it seriously without fear of causing them to feel bored, tired or inhibited by its length, the questionnaire included just8 items, and only two of them (Q 6, 7) are open-ended while the six others (Q 1, 2, 3, 4, 5, 8) are close-ended requiring teachersto merelytick the appropriate answer.

Question 1: How many years have you been teaching in higher education?

Teaching Experience	N°	%
Less than 5 years	13	24.1%
5-10 years	10	18.5%
10-15 years	24	44.4%

More than 15 years	**7**	**13%**
Total	**54**	**100%**

Table 2: Teachers' Teaching Experiences

As table 2 shows, 13 teachers have less than 5 years teaching experience, 10 teachers have between 5 and 10 years' experience, 24 teachers have between 10 and 15 years' experience and 7 teachers have more than 15 years' experience.

Question 2: What is your primary language of instruction?

Language	N°	%
Arabic	**43**	**79.6%**
French	**11**	**20.4%**
English	**00**	**00%**
Total	**54**	**100%**

Table 3: Teachers' Primary Language of Instruction

None of the respondents teaches in English and this is understandable since the training is devoted for teachers of other subjects than English. So the majority of the respondents to the questionnaire teach their subjects in Arabic (43 teachers) and in French (11 teachers). Arabic is used as a medium of instruction in the departments of Arabic Language and Literature, History and Geography and Philosophy while French is used in the department of French. The language that is officially used in the departments of Physics and Chemistry, Natural Sciences, Computer Science and Exact Sciences is Arabic though French can alternatively also be used. English is expected to be used as a medium of instruction in this last category of departments following the English language training.

Question 3: Which department are you affiliated with?

Department	N°	%
Arabic Language and Literature	5	9.3%
History and Geography	6	11.1%
Philosophy	00	00%
French	11	20.4%
Physics and Chemistry	8	14.8%
Natural Sciences	8	14.8%
Computer Science	6	11.1%
Exact Sciences	10	18.5%
Total	**54**	**100%**

Table 4: Teachers' Fields of Specialty

This question enquires about the departments with which the respondents to the questionnaire are affiliated. Among them, 5 teachers are affiliated with the department of Arabic Language and Literature, 6 teachers with the department of History and Geography, 00 teachers with the department of Philosophy, 11 teachers with the department of French, 8 teachers with the department of Physics and Chemistry, 8 teachers with the department of Natural Sciences, 6 teachers with the department of Computer Science, and 10 teachers with the department of Exact Sciences.

Question 4: How would you rate your English proficiency level?

Proficiency Level	N°	%
Beginner	37	68.5%
Intermediate	17	31.5%
Advanced	00	00%
Total	54	100%

Table 4: Teachers' Perception of their English Proficiency Level

The majority of the teachers (37) think that their English proficiency level is beginner, while 17 of them think that is it intermediate. None of the respondents thinks s/he has an advanced level. This may significantly affect the training and the teachers' ability to use EMI because an adequate proficiency level is an important condition for the success of any EMI programme.

Question 5: How do you feel about the prospect of using English as a medium of instruction?

Teachers' feelings	N°	%
Very comfortable	6	11.1%
Comfortable	11	20.4%
Somewhat comfortable	5	9.3%
Uncomfortable	22	59.3%
Very uncomfortable	10	18.5%
Total	54	100%

Table 5: Teachers' Attitudes Towards EMI Use

The responses to this question have shown that the majority of teachers feel either uncomfortable (22) or very uncomfortable (10) with the prospect of using English as a medium of instruction. Drawing on the results of question 4 where 37 teachers have declared that they have a beginner proficiency level in English, this attitude may be due to the fact that these teachers are not sufficiently proficient in English, especially in what regards academic and technical vocabulary. Many of them may find it challenging to fluently use this foreign language in complex and specialized discussions and to explain nuanced concepts in technical or scientific subjects that require precise terminology. When they are required to teach their subjects in English, these teachers are likely to need more time to prepare, translate or review materials, prepare notes and face anticipated linguistic difficulties. This can create additional workload and stress. Their discomfort may lead them to rely on references

in Arabic or French which results on non-authentic EMI. All this may engender emotional strain that is likely to discourage teachers from fully adopting EMI.

The rest of the respondents feel either very comfortable, (6), comfortable (11) or somewhat comfortable (5) with using English to teach their subjects. They are likely to belong to the category of teachers who have a B1, B2 and C1 proficiency levels in English. They eitherfeel highly confident using English for teaching with minimal linguistic barriers, may occasionally encounter minor language difficulties, or may struggle with specific language aspects or technical terms.

Question 6: When expected to use English as a medium of instruction, which areas of English language proficiency do you think you will find challenging?

This open-ended question gives the teachers an opportunity to express themselves openly in relation to areas they think they will struggle with when they have to use English to deliver their lessons. Teachers' answers were analyzed and grouped according to common themes. The majority of teachers (49 teachers, 90.7%) have agreed that the major challenge they will face is **lack of fluency in spoken English**. They apprehend the prospect of facing difficulties to fluently speak in English while delivering their lectures, especially whenthey have to explain a complex concept or when they have to answer unexpected students' questions. They have also expressed concerns related to **pronunciation difficulties** that would prevent them from ensuring that their speech is comprehensible enough for their students to understand. They find many words difficult to pronounce and they are worried about mispronouncing technical terms. In addition to lack of fluency in spoken English, almost the same teachers (41 teachers, 75.9%) have expressed challenges related to **listening comprehension**. They find difficulties to understand English when they participate in international conferences, when they watch educational videos or listen to audio materials that they would want to use in teaching in the future. These challenges can be explained by lack of practice in spontaneous speaking and listening and they suggest necessity of adequate training that gives teachers sufficient opportunities to use English in speaking and be exposed to it in listening.

An important number of teachers (37 teachers, 68.5%) have also referred to **lack of confidence in teaching complex concepts** as the major difficulty they anticipate when using EMI. They believe that teaching abstract and complex concepts in a language that they do not master is intimidating. They are afraid of confusing their students because they cannot express themselves as precisely as they can in Arabic or French. This lack of confidence is due to lack in English language proficiency which can be overcome by an adequate training and more practice opportunities.

Thirty (30) teachers (55.6%) have declared that grammar and sentence structure are the major challenge they anticipate when using EMI. Their **lack of mastery of the English language structure** will prevent them from using correct grammar and structuring their sentences properly in English. They think that they will frequently find refuge in translating from Arabic or French, therefore making their speech less effective and awkward. Indeed, translating thoughts across languages may lead to grammatical errors and unnatural sentence structures.

Less teachers (17 teachers, 31.5%) have referred to challenges related to **academic vocabulary and technical terminology** specific to their subject area. Some of them have explained that many of the terms used in their fields are complex, and they often find difficulties to think of equivalent expressions in English that convey similar meanings to those used in Arabic or French. This is likely due to lack of exposure to subject-specific English vocabulary, which does not just require the ability to understand terminology but also to explain it clearly to students. However, the fact that only 17 teachers suffer from this difficulty may suggest that the rest of the teachers do not have particular problems related to technical terminology as most of it is close to that used in French. This may particularly be true for those who partly deliver their lectures in French.

Question 7: What pedagogical challenges do you anticipate in teaching your subject in English?

This question is open to teachers' answers to collect from them all the possible challenges they expect when using EMI. It was mostly answered by teachers affiliated with the departments of Physics and Chemistry, Natural Sciences, Computer Science, and Exact Sciences (32 teachers, 59.3%) probably because they feel that they are the ones directly concerned with using EMI in their courses. The answers they had provided were collected, synthesized and grouped according to common concerns among teachers.

Eleven (11) teachers have mentioned challenges related to **language barriers**. They are concerned that they do not possess a sufficiently high English proficiency to effectively communicate with their students and convey their ideas to them in English. This is quite understandable knowing that 37 teachers among the respondents to the questionnaire have already declared that they possess a beginner level in English (Q4). Another group consisting of 9 teachers (16.7%) are concerned about **students' readiness** to receive instruction of their scientific or technical subjects in English. They are afraid that their students may not possess a sufficient English proficiency to understand content or participate effectively in class. One teacher has even claimed that their students have sometimes difficulties to assimilate complex scientific concepts when they are taught in Arabic, and the difficulty would certainly be doubled if these concepts are taught in English. So the combined teachers' and students' lack of proficiency would make it a hard task to teach content in English. Seven teachers (13%), think that **time constraints** would be a challenge when using EMI. They are worried that they would not have sufficient time to prepare their lessons and deliver them in English. Given their many other responsibilities as teachers, they think that the additional chore of preparing lessons in English would overburden them. Four teachers (7.4%) referred to **pedagogical challenges** as their major concern. They are not sure how to possibly adapt their teaching style to EMI situations or how to incorporate their English language learning outcomes into the subject content they would be delivering to their students. Finally, one teacher (1.9%) expressed worries about potential **lack of resources or materials in English** to effectively teach their subject. It might be claimed, however, that this worry is unfounded since English is nowadays known to be the language of academia with the vast majority of scientific publications and research articles published in English.

Question 8: In your opinion, what are the primary benefits of teaching your subject in English? (Check all that apply)

1. Enhances students' English proficiency
2. Prepares students for global opportunities
3. Increases access to international resources
4. Other (please specify):

Benefits	N°	%
Enhances students' English proficiency	31	100%
Prepares students for global opportunities	54	100%
Increases access to international resources	54	57.4%
Other (please specify):		

Table 6: Teachers' Perception of Benefits of EMI

The respondents to the questionnaire have unanimously agreed that the use of English in teaching their subjects **increases access to international resources** and **prepares students for global opportunities**. Their opinions strongly align with the goals of EMI highlighting their recognition of the value that it can add both to the quality of the teaching materials and resources and to the future academic and professional prospects of the students. English is the dominant language of scientific publications and by using EMI, teachers have access to a wider array of resources and materials that are not available in their native language. Thus, both teachers and students are kept informed about the latest advancements in their fields.

Teachers are aware that English proficiency has become a requirement in the job market of today's global world. Students who receive instruction in English and are equipped with this language skill are very likely to attract international employers in various fields from technology to business and are able to effectively compete in a global workforce. English proficiency also enables them to pursue advanced studies and research opportunities in countries where English is the predominant language of instruction and publication. By fostering English

language skills, teachers will increase their students' eligibility for scholarships, graduate programmes and research opportunities at international universities. Consequently, EMI is also of paramount of importance in ***enhancing the students' English proficiency*** (this option was selected by 31 teachers).

When asked to add other benefits of EMI, 37 teachers (57.4%) have given answers that were synthesized and combined together according to their common themes giving way to five broad answers. Seventeen (17) teachers have declared that EMI improves their **careeropportunies** since teaching in English can enhance their professional skills and empower them to become more competitive in the job market. Other 11 teachers have claimed that EMI helps them to have **better communication** with international students and colleagues as teaching in English can make cross-cultural exchange and collaboration easier. Nine (9) teachers have suggested that using English to teach their subjects offers them opportunities to be constantly exposed to English language and culture, leading them to enhancing their language skills and enlarging their cultural knowledge.

6.5. Discussion of the Findings

The analysis of the questionnaire has made it possible to highlight some insights into teachers' perceptions, challenges and expectations related to the use of EMI at the Ecole Normale Supérieure of Constantine. These findings help us gain understanding of the teachers' readiness or reticence towards the English trainingprogramme and EMI potential benefits. They also enable us to obtain specific information which allow us to answer the first research question related to the teachers' perception of their lacks. The fact that the majority of teachers (68.5%) consider that they have an elementary English proficiency level accounts for the discomfort they feel towards the prospect of using English to teach their subjects (59.3% feel "uncomfortable" or "very uncomfortable"). This clearly reveals a considerable gap in their English language skills. The most commonly reported challenges faced by teachers are speaking fluency (90.7%), listening comprehension (75.9%), confidence in teaching complex concepts (68.5%) and grammar issues (55.6%). The findings, thus, suggest that a successful implementation of EMI heavily relies on good language proficiency. Brutt-Griffler and Samimy (1999) and Kim et al. (2018) both stress that high levels of English proficiency are essential for teachers to effectively deliver content and manage classroom interactions. The present study confirmed this when it demonstrated that teachers with higher English proficiency levels were more confident towards the prospect of using EMI. This, in turn, corroborates the conclusions of Dearden (2014) and Macaro et al. (2018), who argued that linguistic competence directly impacts the quality of instruction. The research also highlights the importance of adopting continuous professional development in enhancing teachers' pedagogical strategies and teaching techniques. This closely aligns with the comprehensive EMI training programme developed by Morell et al. (2023), which emphasized the integration of digital competencies and pedagogical strategies. The study found that training programmes that focus on the development of both teaching skills and language proficiency greatly contribute to the effectiveness of EMI.

Furthermore, teachers' concern about students' readiness and English proficiency level (16.7%) adds extra weight to their challenges requiring a parallel need to prepare both teachers and students for EMI. Students preparation involves the introduction of English language courses tailored to their academic fields. Indeed, as Lasagabaster & Sierra (2009) claimed, students with a low English proficiency level may have difficulty to grasp content contrary to their counterparts with a high proficiency level, leading to inequalities among them. This will also create communication breakdowns between teachers and students, hence the necessity of combining teacher training with student training to enhance their English proficiency.

Institutional support, in the form of additional training time, materials and workshops on EMI pedagogy, is also necessary as time constraints (13%) and adapting teaching style (7.4%) have also been raised by some teachers. In this respect, Pun and Thomas (2020), argued that the lack of institutional backup in the form of training, materials, and technological infrastructure constitutes a barrier to the effective implementation of EMI in many institutions. These findings have enabled us to obtain information to answer the second research question related to the teachers' perceptions of the hypothetical challenges they might face when using EMI. However, despite the difficulties expressed by teachers, they unanimously recognized the benefits of EMI in opening global opportunities for students (100%), enhancing their English proficiency level (57.4%) and increasing access to international resources (100%). This implies that policy makers should prioritize EMI as a strategic goal to align with global academic standards. Efforts to implement EMI should also be regarded as an investment in the country's long-term academic and economic competitiveness.

6.6. Pedagogical and Logistical Suggestions

Enhancing teachers' training to successfully use EMI is crucial to guarantee that both instructors and students can succeed in an increasingly globalized educational environment. In the light of the findings of the present study, some suggestions to improve EMI training and encourage more successful EMI in the Algerian tertiary context - and by the same token answer the third research question related to how to cater for these challenges- are provided. As language proficiency and fluency inevitably affect the teaching efficacy in EMI classes, it is essential to construct a comprehensive language training programme. Its aim is to equip teachers with the necessary linguistic tools required for EMI as well as workshops on effective EMI pedagogical strategies that enable teachers to simplify language without losing content depth. The long-term success of the programme is very likely to be affected if adequate training is not adopted. Hence, it would be helpful if institutions provide teachers with language support resources such as English tutoring, access to translation tools or mentorship programmes delivered by proficient teachers of English to foster teachers' confidence and language skills. On the other hand, mastering English language skills solely may not lead to using it successfully in EMI contexts. Thus, it is necessary to combine English language training with specific pedagogical skills such as knowing how to effectively design and use appropriate materials, assess their students' learning, and promote successful classroom interaction. Eventually, teachers will be able to adjust their teaching methods to comprise both the content and the language requirements. Indeed, a combination of English language instruction with pedagogical training would likely result in teachers' higher levels of confidence in their ability to teach their subjects in English.

Conclusion

As English as a medium of instruction (EMI) is growing in vogue, not only in Algeria but in different parts of the world, significant shifts in higher education are made reflecting global trends that emphasize the need for multilingual competency. Nonetheless, as shown in the present study, the adoption of EMI presents significant challenges for teachers, especially those with a low English proficiency level. The results obtained from both the placement test and the questionnaire analysis have indicated that teachers do have a quite limited English language proficiency level and many of them do in fact have difficulties to speak fluently, to understand spoken English and to teach complex notions related to their subjects in English. These challenges necessitate comprehensive teacher training programmes that enable teachers not only to develop their English proficiency but also offer them pedagogical assistance to help them adjust their teaching techniques to suit EMI environments. However, in spite of these challenges, all teachers are well aware of the benefits of EMI, namely increased global scientific and academic opportunities for students, enhanced English proficiency and access to global academic resources. These benefits imply that given adequate institutional support, including sufficient training time and resources, the transition to EMI can be a real success. To guarantee that the Algerian higher education system can fully embrace this shift, it is essential for policymakers to prioritize continued professional development for teachers and to integrate EMI into the broader educational framework. In doing so, Algeria can align its universities with global academic standards and provide its students with the necessary tools to prosper in a rapidly globalizing world.

Findings

1. Motivation and Awareness
- The majority of teachers demonstrated high motivation to learn English, perceiving EMI as vital for academic and professional advancement.
- Teachers linked EMI to enhanced global research opportunities and student competitiveness.
2. Challenges Reported
- Limited initial English proficiency created difficulties in following training modules.
- Lack of access to adequate teaching resources and pedagogical models hindered effective training.
- Concerns emerged about potential declines in content quality if courses are taught in English prematurely.
3. Institutional and Structural Gaps
- Teachers emphasized the absence of systematic policy guidance and follow-up mechanisms.
- Institutional support in terms of mentoring, workload adjustment, and financial incentives was perceived as insufficient.
4. Prospects for Improvement
- Participants recommended gradual implementation of EMI, beginning with pilot modules before full-scale

adoption.
- Teachers called for long-term investment in language training, peer collaboration, and partnerships with international institutions.

Acknowledgment

The authors would like to express their gratitude to the administration of the Ecole Normale Supérieure Assia Djebar, Constantine, for their support in facilitating this study. Special thanks are extended to the participating teachers for their valuable insights and cooperation throughout the research process.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

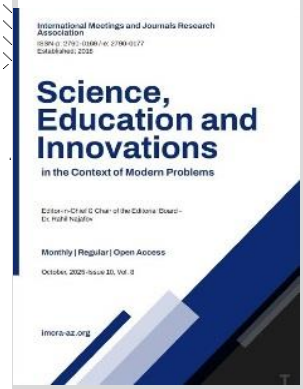
Ethical Considerations

The study was conducted in full compliance with research ethics principles. Participation was voluntary, and informed consent was obtained from all participants prior to the administration of questionnaires. The data collected were kept confidential and used exclusively for academic research purposes. Approval for the research design was obtained from the Research Ethics Committee of the Ecole Normale Supérieure Assia Djebar, Constantine.

References

1. Airey, J., & Linder, C. (2008). Bilingual scientific literacy? The use of English in Swedish university science programmes. Nordic Journal of English Studies, 7(3), 145–161.
2. Belmihoub, K. (2018). English in a multilingual Algeria. World Englishes, 37(2), 207–227. https://doi.org/10.1111/weng.12300
3. Benrabah, M. (2020). The power of language in the classroom: French, Arabic, and English in Algeria. International Journal of Francophone Studies, 23(1), 71–89. https://doi.org/10.1386/ijfs_00007_1
4. Brutt-Griffler, J., & Samimy, K. K. (1999). Revisiting the colonial in the postcolonial: Critical praxis for nonnative-English-speaking teachers in a TESOL program. TESOL Quarterly, 33(3), 413–431. https://doi.org/10.2307/3587672
5. Brutt-Griffler, J., & Samimy, K. K. (2001). Transcending the nativeness paradigm. World Englishes, 20(1), 99–106. https://doi.org/10.1111/1467-971X.00199
6. Dearden, J. (2014). English as a medium of instruction – A growing global phenomenon. British Council.
7. Doiz, A., Lasagabaster, D., & Sierra, J. M. (2011). Internationalisation, multilingualism and English-medium instruction. World Englishes, 30(3), 345–359. https://doi.org/10.1111/j.1467-971X.2011.01718.x
8. Council of Europe. (2013). Introductory guide to the Common European Framework of Reference (CEFR) for English language teachers.
9. Hamane, S. (2023). The changing landscape of language use in Algerian higher education: A comprehensive examination of advantages & changes to English medium instruction (EMI). RA2LC, 7, 531–540.
10. Jenkins, J. (2013). English as a lingua franca in the international university: The politics of academic English language policy. Routledge. https://doi.org/10.4324/9780203798157
11. Kim, J., & Kim, E. (2018). Challenges in implementing English-medium instruction: Perspectives of humanities and social sciences professors teaching engineering students. English for Specific Purposes, 51, 111–123. https://doi.org/10.1016/j.esp.2018.03.005

12. Kirkpatrick, A. (2012). English as an international language in Asia: Implications for language education. In A. Kirkpatrick & R. Sussex (Eds.), English as an international language in Asia: Implications for language education (pp. 29–44). Springer. https://doi.org/10.1007/978-94-007-4578-0_3
13. Klaassen, R. G. (2001). The international university curriculum: Challenges in English-medium engineering education (Doctoral dissertation, Delft University of Technology).
14. Lasagabaster, D., & Sierra, J. M. (2009). Immersion and CLIL in English: More differences than similarities. ELT Journal, 63(4), 367–375. https://doi.org/10.1093/elt/ccn058
15. Macaro, E. (2018). English medium instruction: Time to start asking some hard questions. Modern English Teacher, 24(2), 4–7.
16. Macaro, E., Curle, S., Pun, J., An, J., & Dearden, J. (2018). A systematic review of English medium instruction in higher education. Language Teaching, 51(1), 36–76. https://doi.org/10.1017/S0261444817000350
17. Macaro, E., Akincioğlu, M., & Han, S. (2020). English medium instruction in higher education: Teacher perspectives on professional development and certification. International Journal of Applied Linguistics, 30(1), 144–157. https://doi.org/10.1111/ijal.12272
18. Maghreb Voices. (2019). Algerian Minister of Higher Education addresses students in English. Retrieved from https://maghrebvoices.com
19. Maraf, B., & Zekri, W. (2023). Teachers' challenges with English-blended instruction: The case of teachers from Tlemcen and Biskra University. Proceedings of the International Conference on Educational Development, 3(1), 92–101.
20. Menezla, N., & Benghalem, B. (2024). The effectiveness of educator training in implementing English as a medium of instruction in Algerian universities. Akofena, 14(2), 259–268. https://doi.org/10.5281/zenodo.11000000
21. Morell, T., Aleson-Carbonell, M., & Escabias-Lloret, P. (2023). Prof-teaching: An English-medium instruction professional development program with a digital, linguistic, and pedagogical approach. In D. Banegas, G. Skinnari, & A. Llinares (Eds.), Teacher professional development for the integration of content and language in higher education (pp. 28–47). Routledge.
22. Ouarniki, O. (2023). Exploring teachers' perspectives on the implementation of English as a medium of instruction (EMI) in Algerian higher education institutions: Challenges and opportunities. Journal of Higher Education Research and Development, 8(3), 22–36.
23. Pun, J., & Thomas, N. (2020). English medium instruction: Teachers' challenges and coping strategies. ELT Journal, 74(3), 247–257. https://doi.org/10.1093/elt/ccaa019
24. Pennycook, A. (2016). Politics, power relations and ELT. In G. Hall (Ed.), The Routledge handbook of English language teaching (pp. 25–37). Routledge.


International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Integrating Energy-Based Approaches into Chemistry Teaching: An Experimental Study on Curriculum Effectiveness in Algerian Middle Education

Hafsa Gasmi
PhD in Chemistry Didactics
Laboratory of Science Didactics, École Normale Supérieure, Kouba
Algeria
E-mail: gasmihafsa2025@gmail.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Curriculum innovation; Energy-based teaching approach; Chemistry education; Student achievement; Middle school education; Algeria.

Abstract

This study examines the effectiveness of a chemistry teaching programme structured around the concept of energy as a unifying approach in Algerian middle education. Energy, as a central scientific concept, provides a cross-cutting framework that connects chemical processes, physical phenomena, and real-life applications. Despite its centrality, the Algerian middle school chemistry curriculum has traditionally introduced energy in a fragmented manner, limiting students' capacity to establish meaningful conceptual connections across topics.

The primary aim of this research was to design, implement, and evaluate a curriculum that integrates energy as a guiding principle for teaching chemistry to first- and second-year middle school students. The study employed an experimental design involving 150 students (male and female) drawn from different schools in Algiers. The experimental group received instruction using the energy-based curriculum, supported by specially designed teaching cards, a teacher's guide, and tailored achievement tests. The control group continued with the conventional curriculum.

Quantitative data were analysed using statistical tests at a 0.01 significance level. Results indicated that the experimental group outperformed the control group in achievement tests, demonstrating that the energy-based approach had a significant positive effect on learning outcomes. Furthermore, a strong positive correlation was found between students' achievement and their exposure to the new curriculum. These findings underscore the pedagogical value of employing energy as an integrative concept in chemistry teaching.

The study concludes by recommending the gradual inclusion of energy-based units into national chemistry curricula, extending the pilot programme to diverse geographical and socio-cultural contexts in Algeria, and providing systematic teacher training. Such initiatives could strengthen students' conceptual understanding, scientific literacy, and readiness for higher levels of scientific study.

Citation. Gasmi H. (2025). Integrating Energy-Based Approaches into Chemistry Teaching: An Experimental Study on Curriculum Effectiveness in Algerian Middle Education. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 944–957. https://doi.org/10.56352/sei/8.11.75

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 13.03.2025 | Accepted: 22.07.2025 | Published: 14.09.2025 (available online)

Introduction:

The teaching of sciences aims at understanding three parts: knowledge, skills, and attitudes. The main objective of science teaching is to provide students with experiences that help them become scientifically literate, as the modern

view of science learning includes mathematics, natural sciences, and technology in addition to social sciences. This objective involves placing students in the first rank among the world's nations in achievement in science and mathematics. In modern sciences, students are prepared to participate in civic life, to be productive workers and lifelong learners, as this vision adopts the idea that students will be loyal citizens striving to establish a strong democracy that supports the nation's economy and maintains an advanced position in science and technology. The modern vision of science learning directs us to the philosophy of "less is more," meaning the trend is towards teaching fewer topics while achieving more hands-on work and deeper learning (Al-Huwaidi, 2010, p. 43).

Chemistry is one of the subjects that students should study during their science education, as it relies on the experimental research method, enabling students to acquire skills specific to this method. Chemistry is connected to their daily lives, helping them solve everyday problems, providing them with cognitive skills to interpret some surrounding phenomena, manual skills, and fostering positive attitudes towards science and scientists.

The content of science for the preparatory stage, as approved by the National Academy of Sciences (NAS) in the United States, is classified into seven main topics (known as the national standards for middle school science content), namely: standards of developing and understanding scientific inquiry, standards of physical and chemical sciences, standards of life and environmental sciences, standards of earth and space sciences, standards of science and technology, standards of science from a personal and social perspective, and standards of the history and nature of science. Students at this stage study three main topics in physics and chemistry:

First topic: Properties of matter and the changes that occur to these properties, which include the following standards: density, boiling point, solubility, separation of mixture components. Materials react chemically in various ways to form compounds with completely different properties. Elements react together in multiple ways to form compounds that explain the existence of living and non-living materials encountered.

Second topic: Motions and the forces causing them.

Third topic: Transfer of energy, which includes the following standards: energy is related to heat, light, motion, mechanics, sound, nucleus, and the nature of chemical matter. Energy can be transformed in various ways. Energy is transferred in multiple ways. Nuclear or chemical energy can be transferred inside or outside a given system (Al-Najdi & others, 2005, pp. 61–62).

Chemistry is taught in middle education in Algeria as one of the fields of physical sciences and technology, called: The Field of Matter and its Transformations. The focus is on teaching the microscopic structure of matter and explaining all physical and chemical changes using models, i.e., the chosen teaching approach is: the structure of matter.

It has been observed that students at this age do not comprehend these models as they are not connected to their lives. It would have been more appropriate first to acquaint students with the surrounding chemical materials, describe them, know their properties, the reactions of these materials with one another, and how to benefit from these reactions if possible, then move to microscopic interpretation. We agree with Henry (1976, p. 339) that students need from the start to understand: (a) what they see happening in test tubes, beakers, and flasks; (b) the energy changes that accompany matter changes; (c) the molecular or ionic structure of the materials involved in (a) and (b), and how these help us understand (a) and (b).

For this reason, we proposed another approach to teaching chemistry in middle education: energy. Energy is considered one of the unifying ideas in science teaching. Among the key concepts that should be taught in science in middle school, Pierre (2010, p. 18) mentioned the following: energy transforms in some changes and phenomena, but the total amount of energy remains constant in the universe. This emphasizes the need to link all physical and chemical changes with energy changes, whether absorption or release of energy. According to Henry (1976, pp. 340–341), to introduce energy concepts in education, they should be introduced gradually, considering the student's age. He proposed introducing them in four stages:

First stage: Developing knowledge of thermal changes and stressing that physical change is accompanied by thermal change.

Second stage: Some simple expansion of meanings of heat capacity and latent heat of changes that do not result in new materials, then presenting energy according to kinetic theory. Afterwards, considering physical changes as giving a simplified picture of the meanings of bond formation and breaking.

Third stage: Students should as early as possible get used to interpreting the tendency of reactions to occur in the direction of (a) gas release, (b) precipitate formation, (c) production of a weak electrolyte. These lead to discussions on equilibrium in cases of competing effects. At this stage, the difference between ΔH and ΔG should be clarified.

Fourth stage: More difficult, represented in the importance of energy transformation. It is desirable to provide a simple explanation of entropy changes in the system and universe. Reactions where ΔH is greater than ΔG, nearly equal, or smaller should be discussed. The idea of entropy should be introduced using terms of disorder and randomness as a function of the number of particles. This stage requires careful research, and I believe it is very important that more advanced students receive some information about the role and significance of entropy. At the middle school stage, we will limit ourselves to the first and second stages, where students should know that physical or chemical changes are accompanied by changes in temperature, i.e., changes in energy. Then they should know that materials decompose, their bonds break, and reorganize in another form to create new materials.

Several studies have addressed the concept of energy in different educational subjects. Among them is the study of Yassin Mohammed (2015), which shares with our research the proposal of a chemistry program according to energy concepts. This study aimed to build a teaching–learning program according to renewable energy and nanotechnology concepts and to examine its effect on technological literacy and ethical scientific awareness among third-year students in the Department of Chemistry. To verify this goal, the following null hypotheses were set: (1) There is no statistically significant difference at the 0.05 level between the mean scores of students in the experimental group who study nanotechnology and renewable energy using the teaching–learning program and the mean scores of students in the control group who study the same subject using the traditional method in technological literacy. (2) There is no statistically significant difference at the 0.05 level between the mean scores of students who study nanotechnology and renewable energy according to the teaching–learning program and the mean scores of students in the control group who study the same subject using the traditional method in ethical scientific awareness. The experiment was applied in the first semester of the academic year (2014–2015) on a purposive sample of third-year students in the Chemistry Department, College of Education for Pure Sciences – Ibn al-Haytham. The research sample consisted of 47 students, with 24 in the experimental group and 23 in the control group chosen randomly. The quasi-experimental design with a post-test for two equivalent groups was used. The teaching–learning program was built according to its approved stages, and the content was prepared from renewable energy and nanotechnology concepts. Two research tools were prepared: the technological literacy scale and the ethical scientific awareness scale. The technological literacy scale consisted of 36 items distributed across four domains: cognitive, skill, emotional, and socio-ethical. Its validity and reliability were verified. Statistical tools used included the t-test, factor analysis, Pearson correlation coefficient, effect size equation, and means. The results were as follows: (1) A statistically significant difference between the experimental and control groups in technological literacy in favor of the experimental group, with an effect size of 1.4. (2) A statistically significant difference between the experimental and control groups in ethical scientific awareness in favor of the experimental group, with an effect size of 1.2. In light of these results, the researcher recommended adopting the teaching–learning program based on renewable energy and nanotechnology concepts as part of the general curriculum of faculties of science education, as well as paying attention to modern scientific concepts to achieve better educational outcomes. She also suggested conducting further studies as a continuation of this research.

As for the study of Ali Siyam (2008), it aimed to identify the effect of a program calculated with individualized learning, training, and practice in teaching the unit of energy on scientific skills among seventh-grade students in physics. To answer the research questions and test its hypotheses, the researcher selected a purposive sample of seventh-grade students at Rafah Boys' Preparatory School for Refugees, consisting of three sections with a total of 90 students divided into three groups: the first experimental group (30 students), the second experimental group (30 students), and the control group (30 students). The study relied on two tools for data collection: an achievement test of cognitive scientific skills in the unit of energy composed of 40 multiple-choice items, and an observation card of performance scientific skills in the unit of energy composed of 14 items. The study concluded the following: there were statistically significant differences at the 0.05 level in cognitive scientific skills attributed to the teaching method, in favor of the first experimental group over the control group, showing the effectiveness of the program based on individualized learning, training, and practice in developing cognitive scientific skills in the energy unit among seventh-grade students. There were statistically significant differences at the 0.05 level in perfor-

mance scientific skills attributed to the teaching method, in favor of the first experimental group over the control group, and there were statistically significant differences at the 0.05 level in favor of the first experimental group over the control group, showing the effectiveness of the program based on individualized learning, training, and practice in developing performance scientific skills in the energy unit among seventh-grade students.

Problem of the Study:

The teaching of chemistry in middle education in Algeria relies on explaining all physical and chemical transformations using models. It would have been appropriate for the student to first recognize a variety of changes surrounding him in his daily life, then link them to changes in energy—things that are tangible and visible to the student at this stage of life—before moving on to explanations using models.

For this reason, we proposed a chemistry content based on energy as an entry point for teaching chemistry in Algerian middle education, and in this research we sought to determine the effectiveness of this designed content on the achievement of middle school students in Algeria.

Hypotheses: The research objectives are to test the following null hypotheses:

- There are no statistically significant differences at the 0.01 significance level between the mean achievement of the experimental group students and the mean achievement of the control group students.

- There are no statistically significant differences at the 0.01 significance level between the mean achievement of males in the experimental group and the mean achievement of females in the experimental group.

- There is no statistically significant correlation between the student achievement variable and the curriculum variable.

Importance of the Study: This research helps:

- **Chemistry curriculum planners:** by providing them with the most important concepts and approaches used in teaching chemistry in Algerian middle education.

- **Chemistry teachers and inspectors:** by providing them with revised chemistry content, as well as strategies for lesson planning and teaching strategies that assist them.

- **Researchers:** by opening new perspectives for experimenting with, evaluating, and proposing chemistry curricula for other levels, as well as other educational subjects.

Research Terms:

- **Concept of lesson planning:** Ramzi (2006) provides the following definitions:

  - Abdallah Abd Al-Da'im defines it as: drawing up the educational policy in its complete form, a plan that should be based on a comprehensive understanding of the demographic situations of countries, labor energy conditions, economic, educational, and social conditions.

  - Shibl Badran defines it as: predicting the course of the future in education and controlling it in order to achieve balanced educational development, optimal use of available human and financial resources, and linking educational development with comprehensive economic and social development.

  - Mohamed Seif Al-Din Fahmi defines it as: the continuous organized process that includes methods of social research and the principles and methods of education, administration, economics, and finance, with the aim that students receive adequate education with clear objectives.

- **Developed content:** The proposed content for teaching after undergoing processes of adjustment, development, or change.

- **Middle education stage:** The second stage after elementary education, lasting four years, divided into three phases: the adaptation stage (first year), the support and deepening stage (second and third years), and the guidance stage (fourth year). Student ages range between eleven (11) and sixteen (16) years.

- **Chemistry subject:** The content devoted to studying matter in terms of its properties, structure, composition, behavior, reactions and interactions, and its applications in daily life.

Research Methodology and Procedures:

- **Research population and sample:**

The research population includes all first- and second-year students in middle schools in Medea Province, Algeria, at the time of the study.

A random sample of one hundred fifty (150) first- and second-year middle school students was selected, divided into a control group and an experimental group.

The control group included seventy-one (71) students: thirty-four (34) males and thirty-seven (37) females. The experimental group included seventy-nine (79) students: forty (40) males and thirty-nine (39) females, as shown in the following table:

	Experimental group	**Control group**
	Total	Males
First year	38	20
Second year	41	20
Total	79	40

Table (01): Distribution of the research sample students across the first and second year of middle school.

- **Research tools:** To verify the research hypotheses, we used the following tools:

1. **Preparation of chemistry content based on the concept of energy:**

○ *First year of middle school:* We propose teaching physical changes using experiments that demonstrate these changes and link them to changes in temperature, i.e., energy changes, in line with the chosen approach. The current Algerian chemistry curriculum focuses only on changes of state (between solid, liquid, and gaseous states), while physical change involves changes in the appearance of matter, taste, color, magnetic state, etc. We ensured that these experiments were drawn from the student's daily life and used non-toxic materials, as shown in the following table:

Unit	**Educational units**	**Teaching/learning procedures**	**Number of sessions**	**Educational objectives**
Physical change	• Heating paraffin • Heating glass	1	- Recognize a variety of chemical materials (paraffin, glass, marble, platinum) and describe them (hardness, color, smell, density, melting point). - Identify physical changes and link them to changes in temperature. - Verify the law of conservation of mass in physical change.	

Unit	Educational units	Teaching/learning procedures	Number of sessions	Educational objectives
	• Heating marble • Heating a platinum wire	1		

Table (02): Proposed educational units for teaching first-year middle school students.

• *Second year of middle school:* We include experiments covering most types of chemical reactions: combination, decomposition, single replacement, double replacement, and combustion, to help students recognize a considerable number of chemical substances and their physical and chemical properties, and link these reactions with changes in temperature and energy. Since the current Algerian curriculum covers only a few substances and reactions, additional experiments should be introduced—color changes, disappearance and appearance of substances, formation of precipitates—because at this age students depend on sensory observation and description. We ensured that the selected substances are colored and that their reactions yield observable products, making them suitable for the students' age. See the following table:

Unit	Educational units	Teaching/learning procedures	Number of sessions	Educational objectives
Chemical change	Combination of elements or compounds to form new substances	• Combination of iron and sulfur • Combination of iodine and aluminum	1	- Recognize chemical changes and link them to changes in energy. - Recognize a variety of chemical substances and describe them. - Identify most types of chemical changes (combination, decomposition, single replacement, double replacement, combustion). - Understand that substances react (combine, decompose, burn) to produce new substances different from the starting materials in a chemical transformation. - Express reactions using word equations, then symbols.
	• Combination of copper and oxygen • Heating magnesium ribbon	1		
	Decomposition of compounds to form new compounds	• Heating sugar • Heating copper carbonate • Heating mercury oxide	1	

Unit	Educational units	Teaching/learning procedures	Number of sessions	Educational objectives
	Combustion of substances to form new substances	• Combustion of hydrogen • Combustion of carbon	1	
	• Combustion of propane • Combustion of magnesium	1		

Table (03): Proposed educational units for teaching chemistry to second-year middle school students.

2. **Preparation of lesson cards:** The researchers prepared cards for applying the selected educational units. These cards include objectives to be achieved by the teacher at the end of the session, necessary tools, laboratory safety precautions, class activities, and the final blackboard summary, based on educational literature on lesson planning.

3. **Preparation of a teacher's guide:** Lesson cards were accompanied by a guide designed to help teachers implement this curriculum. It includes educational objectives, key concepts teachers should master, and clarifications on experiments and materials used.

4. **Preparation of an achievement test:** Two tests were prepared, one for each year, each including multiple-choice questions and one open question requiring writing equations. The aim was to measure student achievement after applying the proposed curriculum lessons. These were applied to both the experimental and control groups.

- **Validity and reliability of the test:** The achievement tests were validated by presenting them to chemistry teachers in middle education and specialists in chemistry education. Some modifications were made based on reviewers' recommendations.

Statistical Processing:

To verify the previous hypotheses, we used the independent samples *t*-test to compare two independent groups. According to Al-Munizil (p. 233), the assumptions of the independent samples *t*-test include: random sampling, normality of the two populations, independence of observations, random distribution of samples into groups, and equality of population variances. All assumptions can be confirmed through researcher procedures, except the last, which is checked using a homogeneity test (Levene's test). We also used Pearson's correlation coefficient to test the relationship between curriculum and achievement.

Results and Discussion:

Study Results and Discussion:

First Year of Middle School:

1- There are no statistically significant differences at the significance level of 0.01 between the average achievement of students in the experimental group and the average achievement of students in the control group in the first year of middle school.

By applying the Student's *t* test for independent samples, we obtain the following results:

First Year	Sample Size	Mean	Standard Deviation	Standard Error of the Mean
Academic Achievement – Experimental	38	15.53	3.85	.62

First Year	Sample Size	Mean	Standard Deviation	Standard Error of the Mean
Academic Achievement – Control	33	10.79	3.84	.67

Levene's Test for Homogeneity of Variance	*t* Test for Equality of Means	95% Confidence Interval
F	Sig.	*t*
Academic Achievement – Equal Variances Assumed	.00	.975
Academic Achievement – Equal Variances Not Assumed	5.18	67.65

Table (04): Student's *t* test results for the achievement test for first-year middle school students

Levene's test for homogeneity of variance indicates that the value of F is not statistically significant at the 0.01 significance level, which means there is homogeneity in variance. Therefore, we select the *t* test for equal variances. Looking at the results of the *t* test for equality of variances, it equals 5.18 with 69 degrees of freedom, which is statistically significant at the 0.01 level. This means that there are statistically significant differences at the 0.01 significance level. Considering the means, the experimental group had a mean of 15.53, while the control group had a mean of 10.79, meaning the differences are in favor of the experimental group. From all the above, there are statistically significant differences between the achievement of the experimental group and the control group in the first year of middle school, in favor of the experimental group.

2- There are no statistically significant differences between the achievement of males in the first year of middle school and females of the same year.

By applying the Student's *t* test for independent samples, we obtain the following results:

First Year	Sample Size	Mean	Standard Deviation	Standard Error of the Mean
Academic Achievement – Females	18	16.11	3.18	.75
Academic Achievement – Males	20	15.00	4.38	.98

Levene's Test for Homogeneity of Variance	*t* Test for Equality of Means	95% Confidence Interval
F	Sig.	*t*
Academic Achievement – Equal Variances Assumed	2.41	.129
Academic Achievement – Equal Variances Not Assumed	.90	34.54

Table (05): Student's *t* test results for the achievement test of students in the experimental group for the first year of middle school

Levene's test for homogeneity of variance indicates that the value of F is not statistically significant at the 0.01 significance level, which means there is homogeneity in variance. Therefore, we select the *t* test for equal variances. Looking at the *t* test results for equal variances, it equals 0.89 with 36 degrees of freedom, which is not statistically

significant at the 0.01 level. Thus, there are no statistically significant differences between the achievement of males and females in the first year of middle school.

3- There is no statistically significant correlation between the achievement of first-year middle school students and the proposed curriculum for the same year.

By applying Pearson's correlation test, we obtain the following results:

Variable	Academic Achievement	Curriculum Variable
Academic Achievement	Pearson Correlation = 1	.529**
	Sig. = .000	
	N = 71	N = 71
Curriculum Variable	Pearson Correlation = .529**	1
	Sig. = .000	
	N = 71	N = 71

Table (06): Pearson's correlation test results for the achievement test of first-year middle school students

From the table, the correlation coefficient equals 0.529, which means there is a moderate positive correlation between the achievement variable and the curriculum variable. The probability was 0.000, meaning this correlation is statistically significant. Thus, there is a moderate positive correlation between the achievement of first-year middle school students and the proposed curriculum for the same year at the 0.01 significance level.

Second Year of Middle School:

1- There are no statistically significant differences at the 0.01 significance level between the average achievement of students in the experimental group and the average achievement of students in the control group in the second year of middle school.

By applying the Student's *t* test for independent samples, we obtain the following results:

Group	Sample Size	Mean	Standard Deviation	Standard Error of the Mean
Academic Achievement – Experimental	41	16.6463	2.54029	.39673
Academic Achievement – Control	38	13.4474	2.13652	.34659

Levene's Test for Homogeneity of Variance	*t* Test for Equality of Means	95% Confidence Interval
F	Sig.	*t*
Equal Variances Assumed	3.322	.072
Equal Variances Not Assumed	6.072	76.306

Table (07): Student's *t* test results for the achievement test of second-year middle school students

Levene's test for homogeneity of variance indicates that the value of F is not statistically significant at the 0.01 significance level, which means there is homogeneity in variance. Therefore, we select the *t* test for equal variances. Looking at the value of *t* for equal variances, it equals 6.033 with 77 degrees of freedom, which is statistically significant at the 0.01 level. This means there are statistically significant differences at the 0.01 level. Considering the means, the experimental group had a mean of 16.64, while the control group had a mean of 13.44, which means the differences are in favor of the experimental group. From all the above, there are statistically significant differences between the achievement of the experimental group and the control group in the second year of middle school, in favor of the experimental group.

2- There are no statistically significant differences between the achievement of males in the second year of middle school and females of the same year.

By applying the Student's *t* test for independent samples, we obtain the following results:

Second Year	**Sample Size**	**Mean**	**Standard Deviation**	**Standard Error of the Mean**
Academic Achievement – Males	20	16.2000	2.72609	.60957
Academic Achievement – Females	21	17.0714	2.33605	.50977

Levene's Test for Homogeneity of Variance	***t* Test for Equality of Means**	**95% Confidence Interval**
F	Sig.	*t*
Equal Variances Assumed	.960	.333
Equal Variances Not Assumed	-1.097	37.462

Table (08): Student's *t* test results for the achievement test of students in the experimental group for the second year of middle school

Levene's test for homogeneity of variance indicates that the value of F is not statistically significant at the 0.01 level, which means there is homogeneity in variance. Therefore, we select the *t* test for equal variances. Looking at the value of *t* for equal variances, it equals -1.101 with 39 degrees of freedom, which is not statistically significant at the 0.01 level. Thus, there are no statistically significant differences between the achievement of males and females in the second year of middle school.

3- There is no statistically significant correlation between the achievement of second-year middle school students and the proposed curriculum for the same year.

By applying Pearson's correlation test, we obtain the following results:

Variable	**Academic Achievement**	**Curriculum Variable**
Academic Achievement	Pearson Correlation = 1	.567**
	Sig. = .000	
	N = 79	N = 79
Curriculum Variable	Pearson Correlation = .567**	1

Variable	Academic Achievement	Curriculum Variable
	Sig. = .000	
	N = 79	N = 79

Table (09): Pearson's correlation test results for the achievement test for second-year middle school students

From the table, the correlation coefficient equals 0.567, meaning that there is a moderate positive correlation between the achievement variable and the curriculum variable. The probability was 0.000, which means that this correlation is statistically significant. Thus, there is a moderate positive correlation between the achievement of second-year middle school students and the curriculum variable for the same year at the 0.01 significance level.

Interpretation of the Results:

From the above, we find statistically significant differences at the 0.01 significance level between the achievement of the experimental group and the achievement of the control group, and these differences are in favor of the experimental group in both the first and second years of middle school in Algeria. This is attributed to the change in the teaching approach of chemistry from a model-based approach to an energy-based approach, meaning that the new approach has a positive effect on students' achievement in middle school in Algeria.

There are no statistically significant differences between the achievement of males in the experimental group and the achievement of females in the same group in both the first and second years of middle school. This means that the chosen approach to teaching chemistry in middle school has the same effect on both females and males, which supports its use in Algerian middle schools since they are mixed schools.

There is a positive correlation between the achievement variable and the curriculum variable, and this positive correlation is statistically significant at the 0.01 level. This means that the improvement in students' achievement results was associated with the change in the curriculum, that is, the change in the teaching approach of chemistry in middle school.

Research Proposals:

1. Valuing the results of researchers in developing and revising curricula, and taking into account the results they achieve.
2. Carrying out periodic reforms of curricula in various subjects in order to keep pace with all developments in various fields, as well as keeping pace with other countries and their advanced curricula.
3. Focusing on the educational content of subjects and giving it importance.
4. Applying the proposed curriculum to larger samples and in various regions of the country.
5. Including units in the chemistry curriculum that rely on energy as an entry point to learning.

Findings

1. Improved Achievement:
- The experimental group's performance showed statistically significant improvement over the control group at the 0.01 significance level.
2. Positive Correlation:
- A strong positive correlation was found between the achievement scores of students and the energy-based curriculum design, confirming its pedagogical impact.
3. Curriculum Relevance:
- Teachers reported that the integration of energy as a central theme provided coherence across topics, making chemistry more relevant to everyday life and other sciences.
4. Scalability:
- Results suggest that the proposed approach can be effectively scaled to larger samples and implemented in diverse Algerian educational contexts.

Acknowledgment

The author expresses sincere gratitude to the participating schools, teachers, and students for their collaboration and valuable contributions. Appreciation is also extended to the Laboratory of Science Didactics at the École Normale Supérieure, Kouba, for academic and logistical support.

Funding

This research did not receive external funding. It was carried out as part of the author's independent academic work within the Laboratory of Science Didactics, École Normale Supérieure, Kouba (Algiers).

Conflict of Interest

The author declares no conflict of interest regarding the publication of this article.

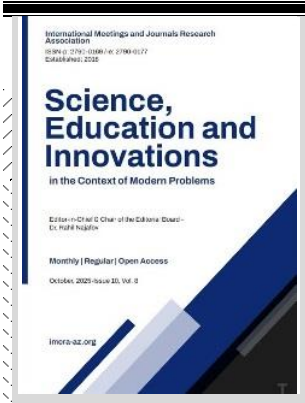
Ethical Considerations

The study followed all ethical guidelines applicable to educational research. Participation of students was voluntary, and informed consent was obtained from both students and their parents/guardians. The anonymity and confidentiality of participants were strictly maintained. The research design and data collection procedures were reviewed and approved by the Laboratory of Science Didactics' internal ethics review board.

References:

1. Tahiya, Hamed Abdel Aali. (2006). *Teaching Planning*. Faculty of Education, Assiut University.
2. Jamel, Abdel Salam Abdel Rahman. (2002). *Fundamentals of Educational Curricula and Methods of Their Development* (2nd ed.). Dar Al-Manahij.
3. Al-Khatib, Ahmed Shafiq, & Khair Allah, Youssef Suleiman. *Comprehensive Scientific Encyclopedia*. Lebanon: Lebanon Library Publishers.
4. Ramzy, Ahmed Abdel Hay. (2006). *Educational Planning: Its Nature, Justifications, and Foundations* (1st ed.). Alexandria: Dar Al-Wafa for Printing and Publishing.
5. Shaala, Al-Jamil Mohamed Abdel Sami. (2005). *Educational Evaluation of the Educational System: Trends and Aspirations*. Cairo: Dar Al-Kitab Al-Hadith.
6. Al-Tayeb, Ahmed Mohamed. (1999). *Educational Planning* (1st ed.). Alexandria: Al-Maktab Al-Jami'i Al-Hadith.
7. Ali Siam, Hani, & Abu Shaqir, Mohamed Suleiman. (2008). *The Effect of a Program Based on the Methods of Individualized Instruction, Training, and Practice for Teaching the Energy Unit on the Scientific Skills of Seventh Grade Students*. Master's Thesis in Curricula and Methods of Teaching Educational Technology. Gaza: Islamic University.
8. Al-Munaizel, Abdullah Falah, & Gharaibeh, Ayesh Mousa. *Educational Statistics: Applications Using SPSS*. Yemen: Dar Al-Maseera for Publishing and Distribution.
9. Al-Najdi, Ahmed, Saudi, Mona Abdel Hadi, & Rashid, Ali. (2005). *Modern Trends in Science Education in Light of Global Standards and the Development of Thinking and the Constructivist Theory* (1st ed.). Cairo: Dar Al-Fikr Al-Arabi for Publishing and Distribution.
10. Henry, Dekr, Kheimi, Enslah, Klaoui, Hassan, Hamzaoui, Hind, & Sheikh Hussein, Abdel Majid. (1971). *New Trends in Teaching Chemistry* (Vol. 1). Syria: Damascus University Press.
11. Al-Huwaidi, Zaid. (2010). *Methods of Teaching Science in the Basic Stage*. United Arab Emirates: Dar Al-Kitab Al-Jami'i.
12. Yassin, Mohamed Farah, & Ahmed, Basma Mohamed. (2015). *Building an Educational–Learning Program According to the Concepts of Renewable Energy and Nanotechnology and Its Effect on Technological Literacy and Ethical Scientific Awareness Among Chemistry Students*. Doctoral Dissertation in Methods of Teaching Chemistry. Iraq: University of Baghdad.
13. Deketele, J. M. (1982). *Le passage de l'enseignement secondaire à l'enseignement supérieur*.
14. Lawrence, P., & Grayson. (1980). *La conception des programmes de formation des ingénieurs*. UNESCO: Imprimeries Réunies de Lausanne.

15. Pierre, Léna. (2011). *10 Notions Clés pour Enseigner les Sciences de la Maternelle à la 3e* (3rd ed.). France: Le Pommier.
16. Wilbur, Harris. (1968). *The Nature and Function of Educational Evaluations.*
17. Airey, J., & Linder, C. (2008). Bilingual scientific literacy? The use of English in Swedish university science programmes. Nordic Journal of English Studies, 7(3), 145–161.
18. Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. Longman.
19. Belmihoub, K. (2018). English in a multilingual Algeria. World Englishes, 37(2), 207–227. https://doi.org/10.1111/weng.12300
20. Benrabah, M. (2020). The power of language in the classroom: French, Arabic, and English in Algeria. International Journal of Francophone Studies, 23(1), 71–89. https://doi.org/10.1386/ijfs_00007_1
21. Bybee, R. W. (2013). The case for STEM education: Challenges and opportunities. NSTA Press.
22. Dearden, J. (2014). English as a medium of instruction – A growing global phenomenon. British Council.
23. Driver, R., Squires, A., Rushworth, P., & Wood-Robinson, V. (2014). Making sense of secondary science: Research into children's ideas. Routledge.
24. Duit, R. (2009). Bibliography: Students' and teachers' conceptions and science education. International Journal of Science Education, 31(16), 2109–2130. https://doi.org/10.1080/09500690903226245
25. Hamane, S. (2023). The changing landscape of language use in Algerian higher education: A comprehensive examination of advantages & changes to English medium instruction (EMI). RA2LC, 7, 531–540.
26. Jenkins, J. (2013). English as a lingua franca in the international university: The politics of academic English language policy. Routledge. https://doi.org/10.4324/9780203798157
27. Kim, J., & Kim, E. (2018). Challenges in implementing English-medium instruction: Perspectives of humanities and social sciences professors teaching engineering students. English for Specific Purposes, 51, 111–123. https://doi.org/10.1016/j.esp.2018.03.005
28. Macaro, E., Curle, S., Pun, J., An, J., & Dearden, J. (2018). A systematic review of English medium instruction in higher education. Language Teaching, 51(1), 36–76. https://doi.org/10.1017/S0261444817000350
29. Millar, R. (2010). Practical work. In J. Osborne & J. Dillon (Eds.), Good practice in science teaching: What research has to say (2nd ed., pp. 108–134). Open University Press.
30. Osborne, J., & Dillon, J. (2008). Science education in Europe: Critical reflections. Nuffield Foundation.
31. Taber, K. S. (2019). Learning science: Theoretical foundations. Cambridge University Press. https://doi.org/10.1017/9781108617347


International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Correctness of Arabic Linguistic Structures: Concepts, Foundations, and Analytical Approaches

Charef Tahar
Research Scholar
University of Ziane Achour in Djelfa
Algeria
E-mail: tahar.charef@univ-djelfa.dz

Issue web link	https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html
Keywords	Correctness of structures – Intuition – Flexibility of language – Contextual clues – I'rab – Avoidance of ambiguity.

Abstract
This research examines the correctness of Arabic linguistic structures by exploring their conceptual and foundational dimensions within the broader framework of Arabic grammar, discourse, and stylistics. The study argues that linguistic correctness is not merely a matter of formal rule application but is grounded in the preservation of the general system of the Arabic language—a system marked by its structural flexibility, lexical richness, and aesthetic beauty. Particular emphasis is placed on the role of iʿrāb (inflection) as a decisive marker of meaning, the dynamics of omission and reduction in syntax, and the significance of contextual clues in disambiguating structures.
By integrating descriptive analysis with interpretative approaches, this work demonstrates that grammatical knowledge alone is insufficient without the cultivation of refined linguistic taste, critical reading, and stylistic practice. Creativity in Arabic discourse arises from an informed balance between normative rules and the intuitive insights of native usage, ensuring both clarity and expressiveness. The study highlights how linguistic correctness contributes to communicative precision, prevents ambiguity, and fosters a deeper appreciation of the literary and rhetorical heritage of Arabic.

Citation. Tahar Ch. (2025). The Correctness of Arabic Linguistic Structures: Concepts, Foundations, and Analytical Approaches. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 957–963. https://doi.org/10.56352/sei/8.11.76

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 17.03.2025	Accepted: 22.06.2025	Published: 14.09.2025 (available online)

Introduction

The correctness of linguistic structures and their social circulation is a requirement through which language is elevated, gains prestige, and spreads. One manifestation of this in reality is the repeated use and circulation of language among its speakers in their daily communication—spoken, dialogued, or written—while observing normative rules and what Arabs have recognized as norms and customs, meaning adherence to linguistic conventions and prevailing usage. This applies whether in communication to fulfill needs and purposes, to express inner emotions and the depths of the soul, or to guide thought and persuade the addressee, and in working to create an Arab linguistic community, intellectually and ideologically, where the features and characteristics of its language are smoothly and correctly applied once interaction or contact is made, whether in dealing or companionship.

The correctness of structures in Arabic does not contradict pure Arab intuition, as it preserves the foundations, adheres to the rules of grammar, morphology, and phonology, and aligns with the lexical and terminological meanings of words in terms of accuracy, strength, firmness, ease, and eloquence. It also conforms with the Arabic style, characterized by simplicity, smoothness, precision of description and imagery, persuasive power, and strong impact.

In this paper, we wanted to answer such questions as: What is the path to linguistic correctness? What are the manifestations of correctness in the structures of our Arabic language? What is required to achieve this correctness and proper understanding? And should we pursue independent effort in this, working to elevate and spread this language?

1- Intuition, Origin, and Learning

Intuition (al-salīqa) is the clear path and the natural disposition; a man speaks by intuition, that is, by his nature and pure, sound taste, without learning or training. It is often used in reference to the eloquence of language; thus, the intuitive (al-salīqī) is the one who speaks eloquently by the disposition and nature on which he was raised, without learning, with fluency, unpretentiously, and without reliance on standards or imitation. The intuitive among the reciters is the one who recites the Qur'an by his nature, without having studied or recited under the reciters. For a construction to be acceptable, in circulation, and effective, it must be intuitive, easy on the tongue, palatable to both ear and mind through interaction and acceptance, not contradicting what the Arab taste has acknowledged from the pure source to which the soul leans by nature, and it must come described as being issued from disposition and instinct, and received likewise under the same description, without affectation in striving for ease and simplicity. For intuition, just as it is praised for simplicity and eloquence, may also be criticized for lack of i'rāb (inflection), or for excessive looseness in giving free rein to the tongue and its freedom to the point of contradiction and falling into linguistic error. The poet said: *"I am not a grammarian twisting his tongue ... but an intuitive speaker, I speak and inflect correctly."* It is said that Abū al-Aswad al-Duʾalī laid down grammar when linguistic error spread in the speech of the Arabs and intuition dominated, without consideration for the rules of grammar and inflection; here there was the possibility of error. In this respect, intuition is criticized. We spoke here of intuition because its basis is positive, and because speech described by it is accepted, and because it is the original foundation prior to the grammatical rules which came after intuition weakened.

2- Flexibility and Breadth of Arabic Construction

Flexibility in Arabic construction means its ease of adaptation and transformation through preposing or postposing, deletion or addition, substitution or alteration. This is a sign of the vitality, dynamism, and interaction of constructions, and thus of their development and spread. It also indicates *"the sharp intelligence of its speakers, the precision of their observation, the subtlety of their feeling, the fertility of their imagination, and their ability to innovate in expression and imagery. For this reason, it is considered among the greatest features and characteristics of the language."* Flexibility of the language corresponds to the abundance of its vocabulary and the multiplicity of its sentences, and consequently, the breadth of its meanings and its capacity for different styles, which facilitates communication and expression of all purposes, and indicates as well the abundance of its resources and the originality of thought expressed through it.

Examples indicative of the flexibility of Arabic are so numerous they cannot be confined, nor does this context allow mention of many of them. By way of example, we mention some:

- Addressing the singular in the form of addressing two, such as the words of Imru' al-Qays: *"Stop, let us weep, for the memory of a beloved and a dwelling ... at the edge of al-Liwā between al-Dakhūl and Ḥawmal."*

  It was customary among the Arabs to extend the address of the singular to two and to the plural, as part of the flexibility of their tongues. Similarly, the poet said: *"If you both rebuke me, O son of ʿAffān, I desist ... and if you both protect me, I shall defend a well-guarded honor."*

  "It is permissible that what is meant is: 'Stop, stop,' and the addition of the alif is a sign indicating that what is meant is repetition of the word, as Abū ʿUthmān al-Māzinī said about the Almighty's words: {He said: My Lord, return me} [Al-Mu'minūn: 99]—the intended meaning being: 'Return me, return me,

return me,' and the wāw was made a sign implying that the meaning is repetition of the word several times..."

- Among the forms of the flexibility of Arabic is the general permissibility of deletion, including deletion of the subject and the object when they are understood from contextual evidence of situation or speech, the aim being to strike the correct place recognized by sound Arab intuition. All this indicates the adaptability, compliance, flexibility, and breadth of Arabic constructions.

- Among the factors in realizing the flexibility and breadth of Arabic is i'rāb: *"For i'rāb gives the speaker breadth in expression, and freedom in speech, allowing preposing and postposing without affecting the correctness and soundness of meaning, as the speech remains understood; such flexibility is not found in inflected languages."* I'rāb is one of the foundations of Arabic grammar, one of its distinguishing features, a factor of its richness, and a means for diversity in its modes of expression.

3- The Value of the Word in Its Harmony with Others

The construction of the word with others, with consideration for its order and harmony in a particular way that observes their semantic connection, is what reveals its value and eloquence, and by it the purpose of communication is realized. *"The individual word has no inherent importance, however harmonious its letters may be, or pleasant its sound and tone; rather, its importance appears when it is organized with others, when it suits what is adjacent to it and agrees with it."*

Quality of composition is not realized by the mere availability of words without the talent and ability to perfect the linking and composition among them. *"If the mere availability of material were sufficient to achieve good composition—which is the arrangement of suitable words and their application to appropriate meanings—then the craft of composed speech in letters, sermons, and poetry would be easy; but the reality is otherwise, as even the eminent fall short of attaining this level."* For this reason, composition has been a sought-after goal known only among the few renowned for seriousness and diligence, while many fell short of it, and some composed but became known for the weakness of their writings, whether for awkwardness or complexity, or for poor estimation of the concord between meaning and the constructions used to express it. Thus, the quality of expression and writing appears in the perfection of linking first between the elements of construction, and second between the construction and its meaning.

4- Clues Helping Determine Meaning

4.1 I'rāb and Giving Priority to Meaning over Parsing

I'rāb, in grammatical terminology, is what attaches to the endings of words by way of change according to the factors mentioned—pronounced or implied—that enter upon these words. Giving priority to meaning over parsing in the analysis of constructions means focusing on the intended meaning of the construction and its interpretation, giving it precedence. In cases of grammatical disagreement, grammarians and linguists tend to prefer the interpretation and estimation that serve the meaning and the purpose of the construction and communication. I'rāb is not valid except after understanding the meaning, for according to the grammarians, i'rāb is secondary to meaning. Al-Zajjājī (d. 337 AH) says: *"If it is said: You have mentioned that i'rāb enters into speech, so what necessitated it and why was it needed? The answer: Since nouns are subject to various meanings—they can be subject, object, possessed, or possessor—and since their forms and structures did not indicate these meanings but were shared, the i'rāb movements were placed in them to signify these meanings. So they said: Ḍaraba Zaydun ʿAmran' (Zayd struck ʿAmr), raising Zayd to show that the action is his, and putting ʿAmr in the accusative to show that the action falls upon him."*

The i'rāb movement, just as it distinguishes between the functions of words, also distinguishes between meanings, but it is not the only clue for distinguishing between them; there are other clues such as context, order, situation, lexical meaning, intonation, and others.

4.2 Clues Clarifying and Determining Meaning

The general meaning of constructions and expressions of the language is determined by its system and conventions, and other clues may work together to direct, clarify, or define the meaning. These include the current situation, the linguistic context, social custom, community culture, and lexical-semantic meaning. Among the clues that serve as reference points in Arabic, often clarifying meaning even unintentionally—and which linguists have mentioned in different places, including Ibn Jinnī, who mentioned five with their examples—are:

1. The clue of order, as in: *"Ḍaraba Yaḥyā Bushrā"* (Yaḥyā struck Bushrā).

2. The clue of lexical appropriateness, as in: *"Akhala Yaḥyā kumtharā"* (Yaḥyā ate a pear).

3. The clue of agreement between verb and subject in gender and number, as in: *"Ḍarabat hādhā hādhihi"* (this [female] struck this [male]), and *"Kallama hādhihi hādhā"* (this [male] spoke to this [female]).

4. The clue of the i'rāb sign: the alif and yāʾ of the dual, and the wāw of the plural, as in: *"Akrama al-Yaḥyayān al-Bushrayayn"* (the two Yaḥyās honored the two Bushrās), and *"Ḍaraba al-Bushrayīn al-Yaḥyūn"* (the Yaḥyās struck the two Bushrās).

5. The clue of situation (context): *"Waladat hādhihi hādhihi"* (this one gave birth to this one); the elder is the mother, the younger is the daughter.

All these clues contribute to determining meaning and must be considered before undertaking parsing. The benefit of relying on clues in interpreting constructions or in understanding grammatical relations is that it removes from Arabic grammar

A- Every speculative or logical interpretation of contextual phenomena.

B- Every debate about the logic of this "work" or that, and the authenticity of some words in the work and the derivativeness of other words, and the strength of the factor or its weakness... These indicators are responsible for clarity of meaning and protection from ambiguity, since the abstract linguistic meaning of the text (the apparent meaning of the text) may not be the intended one itself, but the intended meaning is hidden behind the words, where the indicators play the essential role in determining what is meant.

4-3 The syntactic meaning, the linguistic meaning, and the right of parsing

The syntactic meaning is the meaning determined by grammar, and it is derived from the specific structure of words in sentences and phrases, not the original linguistic meaning of the words. It means suspension or correlation; that is, the relationship between words which in turn affects the general meaning of sentences and phrases. Among the examples is the preference of the adjective over the circumstantial clause based on context in the saying of one of the men of Banu Sulul to a native-born man:

"And indeed, I pass by the vile one insulting me * Yet I went on, then said: it does not concern me."

Some grammarians preferred that the clause (insulting me) be adjectival rather than circumstantial, meaning: a vile person whose habit is constant, even though it is related to the word (the vile one), which is definite. This contradicts the common norm that sees clauses after definite nouns as circumstantial. But meaning was more deserving of attention, and the reference here is to the syntactic meaning, not the linguistic meaning.

5.Reconciling grammatical craftsmanship, order, and serving meaning

Grammarians emphasized maintaining grammatical craftsmanship as much as possible and adhering to the general order of the language, and reconciling the two in cases of conflict or potential conflict, with a focus on prioritizing what serves meaning and removes ambiguity, giving this precedence over parsing while attempting estimation and interpretation to preserve the value and right of parsing. Among the grammarians who addressed this issue was Ibn Jinni, in a chapter he included in his book *Al-Khasa'is* which he called "Chapter on the difference between the estimation of parsing and the interpretation of meaning." He said in it:
"Do you not see the difference between the estimation of parsing and the interpretation of meaning? So if something of this sort comes from our scholars, guard yourself from it and do not be carried away by it. If you can make the estimation of parsing conform to the interpretation of meaning, that is the utmost. But if the estimation of

parsing contradicts the interpretation of meaning, then accept the interpretation of meaning as it is, and correct the path of the estimation of parsing, so that nothing escapes you. Beware of being carried away so that you corrupt what you aim to correct."

He also expressed his comfort with giving priority to meaning and correcting parsing in cases of conflict in another chapter which he called "Chapter on the tension between meanings and parsing," where he said:

"This was a place Abu Ali, may God have mercy on him, often frequented, concerned himself with, and encouraged review and careful consideration of. For you find in much prose and poetry that parsing and meaning contend with one another: this calls you to one thing, and this prevents you from it. Whenever they seize upon a piece of speech, I held fast to the bond of meaning and found ease in correcting parsing."

This is a wide field in the study of syntactic structures, and an important one that requires precision and study due to the secrets it holds, with many examples in the Book of God and in Arabic poetry. The correct understanding of Arabic texts takes into account both: meaning and parsing, for they are interdependent. The first consideration is for meaning, as it is what the speech is built upon, and the second consideration is for the principles of grammar and its rules. The perspective of grammarians aligned grammatical craftsmanship with the correctness of meaning, emphasizing the role of meaning in analyzing structures, guiding parsing, and estimating its justifications.

6- The requirement of avoiding ambiguity and ensuring clarity of meaning

The speaker always strives to compose speech that is clear and unambiguous, whether for the purpose of simplification or when deviating from the usual pattern for another communicative purpose. Likewise, researchers in analyzing structures aim to achieve the requirement of avoiding ambiguity and ensuring clarity of meaning. If ambiguity cannot be avoided, the usual pattern must not be violated in any form of transformation or alteration.

Examples of deviating from the usual pattern when ambiguity is avoided include:

- "Do they wait but that Allah should come to them in canopies of clouds" (Al-Baqara: 210). The coming of Allah means the coming of His command and His might, where the annexed word was omitted and the annexed-to was placed in its stead. "The omission of the annexed word and the placement of the annexed-to in its place is frequent and common in the speech of the people when ambiguity is avoided. And it was said: the estimation is that Allah's punishment should come to them in canopies of clouds."

- "And the thief, the male and the female, cut off their hands" (Al-Ma'ida: 38), where the dual (their hands) was used.

- "But if they of themselves be content to remit any part of it unto you, then eat it" (An-Nisa: 4), where the singular "self" was used while plural was intended.

- "And marry not those women whom your fathers married" (An-Nisa: 22), where originally "who" is used for rational beings, but ambiguity here is avoided.

- The poet's verse: "Eat in part of your stomachs and you will remain chaste ... for your time is a time of hunger," where the singular stomach was used but the plural was intended.

- The poet's verse: "Our sons are the sons of our sons, and our daughters ... their sons are the sons of distant men," where he began with "our sons" then reverted to the original with "our daughters."

7- Foundations of the soundness of constructing Arabic discourse

The soundness of Arabic structures and the correct circulation of Arabic discourse cannot be achieved except by those equipped with grammatical knowledge, practiced in refined Arabic styles, acquainted with the correct ways of expression, appreciative of the beauties and marvels of the Arabic language, and living with the masters of eloquence and artistry through reading and interaction.

7-1 Grammatical knowledge

Grammatical knowledge is the acquisition of the mechanism and ability to understand grammar rules and apply them to structures in speech or writing, maintaining the correct structure in terms of choice of words, their adjacency, and their relationship with one another. It is an ability and faculty acquired through learning and developed through conscious practice leading to the refinement of the user's language.

7-2 Mastery of refined Arabic styles

Mastery of refined Arabic styles means excelling in the use of the constructions and authentic elevated expressions of the Arabic language, to convey meanings and ideas with precision and artistry. This is only achieved through abundant conscious reading of literary prose and poetic texts that combine precision of structure, beauty of imagery, and depth of meaning, along with practice in usage, understanding, and appreciation. Thus, the one practiced in the language acquires the ability to distinguish between styles and choose appropriate words for expression.

7-3 Linguistic taste and sensitivity to the beauty of Arabic

Taste assists in selecting words appropriate to context in speech, writing, and composition. It is cultivated and grows through continuous reading and listening to selected eloquent texts. Through it one distinguishes between refined and weak styles, feels them, lives through the transformations of linguistic structures, and interacts with their beauty.

7-4 Harmony and coexistence with the language and its styles

When the speaker uses the language as a tool of thought and communication and conveys daily purposes in eloquent speech, through its various styles of description and dialogue, persuasion, and expression of emotions and feelings—intending thereby to enrich their linguistic resources and expand their ability to employ refined styles—they thereby live in harmony with it, responsive, present in their mind in every situation and statement; creative when writing, persuasive when speaking.

Conclusion:

It has become clear from the foregoing that the soundness of Arabic discourse structures, the achievement of their intended purpose, and the elevation of their styles cannot be realized except through the combination of interrelated elements that represent the pillars of composition, analysis, and understanding. Their foundation is linguistic instinct and natural disposition, but there is no escape from acquiring grammatical knowledge, practice, and training in refined styles, in order to cultivate refined taste that distinguishes between fluent and weak style, and linguistic sensibility that discerns between clarity and obscurity. The flexibility of the Arabic language, its vast resources, the precision of parsing, and the effectiveness of contextual indicators have been powerful pillars in the richness and immortality of this language, and in its ability to meet the needs of expression and communication with clarity, eloquence, and harmony. This is indispensable for every learner, scholar, and creative writer.

Findings

1. Rule-Intuition Integration – Correct Arabic structures require the harmonious application of grammar with the intuitive logic of native expression.
2. Role of Contextual Clues – Interpretation of meaning cannot rely solely on syntactic markers; pragmatic and contextual indicators are essential for accuracy.
3. Centrality of Iʿrāb – Inflection remains a foundational element in distinguishing syntactic functions, semantic relations, and rhetorical effects.
4. Linguistic Creativity – True innovation in Arabic discourse emerges through mastery of grammar, exposure to refined texts, and active stylistic practice.
5. Aesthetic Dimension – Correctness extends beyond function to include eloquence, clarity, and the preservation of Arabic's literary identity.

Ethical Considerations

This research adheres to academic integrity by providing a transparent analysis of linguistic structures without distortion or misrepresentation. All sources used in the literature review have been acknowledged, and no part of

the study involves human or animal experimentation. The work respects cultural sensitivities by treating Arabic linguistic heritage with accuracy and responsibility.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of Interest

The author declares no conflict of interest.

Acknowledgments

The author expresses gratitude to colleagues at the University of Ziane Achour in Djelfa for their encouragement and to the broader community of Arabic linguists and grammarians whose insights continue to inspire the study of the Arabic language. Special thanks are extended to the reviewers and peers who provided constructive feedback on earlier versions of this work.

References

1. Al-Azhari, M. ibn A. (2001). *Tahdhib al-Lugha* (M. Awad Mur'ib, Ed.; Vol. 8, pp. 308–309). Dar Ihya' al-Turath al-'Arabi.
2. Al-Kalqashandi, A. ibn A. (1987–1989). *Subh al-A'sha fi Sina'at al-Insha* (M. H. Shams al-Din, Ed.; Vol. 2, p. 346). Dar al-Kutub al-'Ilmiyya.
3. Al-Khattabi, H. ibn M. (1982). *Gharib al-Hadith* (A. I. al-Gharbawi, Ed.; A. Q. 'Abd Rabb al-Nabi, Hadith verification; Vol. 3, pp. 59–60). Dar al-Fikr.
4. Al-Samarrai, F. S. (2000). *Al-Jumla al-'Arabiyya wa al-Ma'na* (1st ed., p. 53). Dar Ibn Hazm.
5. Al-Sirafi, A. S. al-Hasan ibn 'Abd Allah. (2008). *Sharh Kitab Sibawayh* (A. H. Mahdali & A. S. Ali, Eds.; Vol. 4, p. 98). Dar al-Kutub al-'Ilmiyya.
6. Al-Zajjaji, A. ibn al-Qasim. (1986). *Al-Idah fi 'Ilal al-Nahw* (M. al-Mubarak, Ed.; 5th ed., p. 69). Dar al-Nafa'is.
7. Al-Zarkashi, B. al-Din M. ibn 'Abd Allah. (n.d.). *Al-Burhan fi 'Ulum al-Qur'an* (M. A. Ibrahim, Ed.; Vol. 1, p. 302). Dar al-Turath.
8. Al-Zurqani, A. ibn Ya'ish. (n.d.). *Sharh al-Mufassal* (Vol. 1, p. 72). Idarat al-Tiba'a al-Muniriyya.
9. Hassan, T. (2006). *Al-Lugha al-'Arabiyya: Ma'naha wa Mabnaha* (5th ed., pp. 232–233, 354). 'Alam al-Kutub.
10. Husayn, M. al-Khidr. (2010). *Mawsu'at al-A'mal al-Kamila li al-Imam Muhammad al-Khidr Husayn* (A. R. al-Husayni, Ed.; Vol. 6, Part 1, p. 208). Dar al-Nawadir.
11. Ibn al-Muntajab al-Hamadhani. (2006). *Al-Kitab al-Farid fi I'rab al-Qur'an al-Majid* (M. N. al-Futayh, Ed.; Vol. 1, p. 488). Dar al-Zaman.
12. Ibn Jinni, O. (n.d.). *Al-Khasa'is* (4th ed., Vol. 1, p. 36; Vol. 1, p. 285; Vol. 3, p. 258). Egyptian General Book Organization.
13. Ibn Kamal Pasha, A. ibn S. (1986). *Risala fi Tahqiq Ma'na al-Nazm wa al-Siyagha* (Sh. al-Din & H. Qunaybi, Eds.; pp. 178–189). Islamic University of Madinah, Issues 71–72.
14. Islahi, M. A. A. (2007). *Buhuth wa Maqalat fi al-Lugha wa al-Adab wa Taqwim al-Nusus* (p. 441). Dar al-Gharb al-Islami.
15. Jughaym, N. (2014). *Turuq al-Kashf 'an Maqasid al-Shari'* (p. 94). Dar al-Nafa'is.
16. Imru' al-Qays, H. ibn al-Harith al-Kindi. (2004). *Diwan Imri' al-Qays* ('A. al-Rahman al-Mustawi, Ed.; p. 21). Dar al-Ma'rifa.
17. Sibawayh, 'A. ibn 'Uthman ibn Qanbar. (1988). *Al-Kitab* ('A. H. Harun, Ed.; 3rd ed., Vol. 3, p. 24; Vol. 1, pp. 210). Maktabat al-Khanji.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Diagnostics of the Level of Formation of the Basics of Resource-Saving Culture in Older Preschool Children

Rublevskaya Elena
Associate Professor
Belarusian State Pedagogical University named after Maxim Tank
Minsk, Belarus
E-mail: rublevskaya44@mail.ru

Davidyuk Maxim
Master's Student
Belarusian State Pedagogical University named after Maxim Tank
Minsk, Belarus
Email: davidyuk_ma@gmail.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Resource-saving culture; natural resources; preschool education; older preschool children; diagnostics.

Abstract
This study investigates the relevance and methodology of diagnosing the level of formation of a resource-saving culture in older preschool children. The research highlights the increasing urgency of rational and careful use of natural resources in the context of global ecological and economic challenges. A pedagogical experiment was conducted in a state preschool institution in Minsk, where diagnostic tools such as structured interviews, picture-based tasks, and targeted observations were applied to assess children's knowledge, attitudes, and behavioral readiness for resource-saving practices. The results revealed significant variations in children's understanding of natural resources and their conservation, indicating that the process of forming a culture of resource-saving at this age is still at an early developmental stage. The study emphasizes the importance of initiating resource-saving education during preschool years as a foundation for sustainable behavior in adulthood.

Citation. Rublevskaya E., Davidyuk M. (2025). Diagnostics of the Level of Formation of the Basics of Resource-Saving Culture in Older Preschool Children. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 964–973. https://doi.org/10.56352/sei/8.11.77

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.05.2025 | Accepted: 13.08.2025 | Published: 13.09.2025 (available online)

Actuality

In today's world, the worsening ecological and economic situation is directly linked to the overconsumption of natural resources, depletion of non-renewable reserves, and increasing environmental pollution. Against this background, the need for rational and careful use of resources has become an urgent global priority. The preschool period is a critical developmental stage when the foundations of future personality are formed, and social norms and behaviors are internalized. Introducing children to resource-saving culture during this period fosters ecological consciousness, responsibility, and respect for nature from the earliest stages of development. Despite the theoretical recognition of the im-

portance of resource-saving culture, its practical implementation in preschool education remains limited, which underlines the significance and timeliness of this research.

1. Introduction

In the contemporary world, the global community faces an aggravation of both economic and ecological conditions, largely due to increased resource consumption, depletion of non-renewable natural resources, and environmental pollution caused by industrial and domestic waste. Under these circumstances, the necessity for rational and careful use of natural resources has acquired critical urgency.

One of the key tasks of the preschool education system is therefore the formation of the foundations of a culture of resource-saving in young children. The importance of addressing this issue at an early age is explained by the fact that the preschool period is a unique stage of human development, during which the foundations of future personality are laid. At this age, a child begins to form multifaceted relationships with the surrounding world and with themselves, while developing qualities that will later determine their "face" as a socially responsible individual. Entering life, mastering social norms and rules, and engaging in diverse activities, the child's behavior is shaped and refined.

A review of psychological and pedagogical literature has shown that various aspects of this problem are being developed. The close relationship between the general state of economic development of society and the individual's economic maturity was emphasized by ancient philosophers (Aristotle, Xenophon, Plato) as well as modern economists (L.P. Ponomarev, V.D. Popov, V.P. Chikanov, B.F. Shemyakin). The necessity of economic education at the preschool stage is also underlined in the works of many national pedagogues (L.I. Galkina, L.A. Golub, L.D. Glazyrina, M.F. Grischenko, E.A. Kurak, N. Selivanova, A.A. Smolentseva, A.D. Shatova). Methodologies for the formation of resource-consumption and resource-saving culture are detailed in the works of S.D. Galkina, E.V. Glushchenko, L.B. Klimkovich, I.P. Roslovtseva, and others.

At the current stage, however, the problem of fostering a resource-saving culture, despite its theoretical and practical significance, remains more at the level of problem-setting than of practical resolution.

2. Materials and Methods

2.1. Study Base

The experimental research was carried out at the State Preschool Education Institution "Nursery–Kindergarten No. 244 of Minsk." A total of 52 children from two senior preschool groups were divided into experimental and control cohorts.

2.2. Research Aim

The purpose of the diagnostic stage of the pedagogical experiment was to determine the level of formation of the components of a resource-saving culture among older preschool children.

2.3. Procedure

The diagnostic procedures were conducted in the morning hours. On average, 30 minutes were allocated for each child, taking into account the time needed to establish contact with the participant. The study was organized in a familiar environment with the presence of a close relative or preschool teacher to minimize stress and ensure the child's emotional comfort.

Three diagnostic methods were applied:

1. **Diagnostic conversation** – assessing the child's conceptual understanding of natural resources and conservation;

2. **Picture-based tasks** – designed to match the visual-imaginative thinking characteristic of this age group, accompanied by oral explanations from the researcher;

3. **Targeted diagnostic observation** – to capture children's real-life behaviors over one week in relation to the use of resources such as water, electricity, heat, and waste management.

3. Diagnostic Tools

3.1. Diagnostic Conversation

During the conversation, children were asked the following questions:

1. What are natural resources?
2. Which natural resources do you know?
3. Should natural resources be preserved? Why?
4. Do you personally save natural resources? How?

Responses were evaluated on a 0–4 point scale:

- 0 points – no answer or incorrect answer;
- 1 point – partial or prompted answer;
- 3 points – correct but incomplete answer, given independently;
- 4 points – full, correct, and independent answer.

3.2. Picture-Based Tasks

Children were presented with a set of illustrated tasks, each allocated 30–60 seconds for completion. Questions included:

- What natural resource is shown in this picture? (one-word answer)
- What will happen if this natural resource disappears or becomes excessive?
- What should be done to prevent the disappearance of this natural resource?

Stimulating and guiding assistance was provided if the child struggled.

3.3. Diagnostic Observation

For one week, children's everyday actions were observed in relation to four domains of resource-saving:

- use of water,
- use of electricity,
- use of heat,
- waste disposal.

One point was awarded for each observed act of compliance with resource-saving practices.

4. Assessment Criteria

The levels of formation of a resource-saving culture were categorized as follows:

- **Very High (25–32 points):** Child answers quickly and correctly, demonstrates knowledge and consistent behaviors, concentrated and independent in tasks.
- **High (17–24 points):** Child possesses knowledge, answers most questions, but occasionally needs prompting; demonstrates partial adherence to rules.
- **Medium (9–16 points):** Child struggles to answer independently, requires constant stimulation, provides partial or incorrect answers, rarely demonstrates resource-saving behaviors.
- **Low (0–8 points):** Child cannot answer even with assistance, guesses randomly, shows almost no resource-saving behaviors.

5. Results

5.1. Responses to the Question "What are Natural Resources?"

This question posed considerable difficulty. Only 2 children in the experimental group and 3 in the control group answered independently at a very high level. Several children displayed high-level understanding with minor clarification from the researcher. The majority of children demonstrated only a medium level of comprehension, while 6 children in each group provided irrelevant or fantastical answers such as "a picture" or "a magic marker."

5.2. Quantitative Distribution of Knowledge Levels

Table 1. Children's knowledge levels for the question "What are natural resources?"

Level of knowledge	Experimental group (n=26)	Control group (n=26)
Very High	2	3
High	8	7
Medium	10	10
Low	6	6

The data are also illustrated in Figure 1 (bar chart).

5. Results (continued)

5.2. Responses to the Question "Which Natural Resources Do You Know?"

Children generally managed this task more easily than the previous one, yet the results were not particularly high. Many still required assistance from the researcher. In the control group, 35% of children achieved high and medium levels of knowledge, but only 4% demonstrated a very high level. In contrast, in the experimental group, 46% of children were at the medium level, 23% at the high level, and 8% at the very high level.

Table 2. Children's knowledge levels for the question "Which natural resources do you know?"

Level of knowledge	Experimental group (n=26)	Control group (n=26)
Very High	2	1

High	6	9
Medium	12	9
Low	6	7

Figure 2. Level of children's knowledge for the question "Which natural resources do you know?"

5.3. Responses to the Question "Should Natural Resources Be Preserved? Why Do You Think So?"

This question was aimed at revealing whether children understood the finite nature of natural resources and the need for their careful use. Many children showed signs of surprise, responding that "resources exist, so why should they be preserved?" This indicated a lack of awareness about scarcity and the importance of conservation. The majority of participants demonstrated a medium level of understanding. Only 2 children in the experimental group and 3 in the control group were able to answer affirmatively and provide arguments for the necessity of preserving resources.

Table 3. Children's responses to the question "Should natural resources be preserved? Why do you think so?"

Level of knowledge	Experimental group (n=26)	Control group (n=26)
Very High	2	3
High	6	7
Medium	11	12
Low	7	4

Figure 3. Children's responses to the question "Should natural resources be preserved? Why do you think so?"

5.4. Responses to the Question "Do You Save Natural Resources? How?"

This question aimed to assess children's personal attitude toward conservation and their readiness to perform simple but necessary actions for saving resources. The results showed that children in the experimental group achieved higher levels of formation of resource-saving culture compared to the control group. In the experimental group, 11 children were at medium and high levels, and only 2 were at a low level. In contrast, in the control group, more children remained at the low level, while fewer reached the high level.

Table 4. Children's responses to the question "Do you save natural resources? How?"

Level of knowledge	Experimental group (n=26)	Control group (n=26)
Very High	2	2
High	11	9
Medium	11	11
Low	2	4

Figure 4. Children's responses to the question "Do you save natural resources? How?"

5.5. Picture-Based Task: "What Natural Resource Is This? Name It in One Word"

This task required children to identify the natural resource shown in a picture and name it with one word. The control group experienced greater difficulties: 9 children could not cope with the task and demonstrated a low level. In the experimental group, only 2 children showed such difficulties. Most of the experimental group demonstrated medium-level results in distinguishing natural resources.

Table 5. Results of the task "What natural resource is this? Name it in one word"

Level of knowledge	Experimental group (n=26)	Control group (n=26)
Very High	1	2
High	7	9
Medium	15	6
Low	3	9

Figure 5. Results of the task "What natural resource is this? Name it in one word"

5.6. Picture-Based Task: "What Will Happen If This Natural Resource Disappears or Becomes Excessive?"

In this exercise, children were presented with a second set of pictures that required them to establish the logical consequences of resource disappearance or overabundance. This task was difficult for both groups: approximately 27% of children in both experimental and control groups showed low-level results. The distribution of responses was generally similar across groups: 31% of children demonstrated medium-level understanding, 27% high-level, and only 15% reached a very high level of logical reasoning.

Table 6. Results of the task "What will happen if this natural resource disappears or becomes excessive?"

Level of knowledge	Experimental group (n=26)	Control group (n=26)
Very High	[data from next block]*	[data from next block]*
High	–	–
Medium	–	–
Low	–	–

(*Placeholder — numbers need to be filled once you give me the next part of the text with exact percentages/values.*)

Figure 6. Results of the task "What will happen if this natural resource disappears or becomes excessive?"

5.7. Picture-Based Task: "What Will Happen If This Natural Resource Disappears or Becomes Excessive?"

This exercise required children to establish logical cause-and-effect connections between the disappearance or excessive presence of a natural resource. Both groups faced difficulties: 27% of children in both the experimental and control groups demonstrated low-level results. Overall distributions were nearly identical between the two groups: 31% of children showed medium-level understanding, 27% high-level, and only 15% demonstrated a very high level of logical reasoning.

Table 6. Results of the task "What will happen if this natural resource disappears or becomes excessive?"

Level of knowledge	Experimental group (n=26)	Control group (n=26)

Very High	4	4
High	7	7
Medium	8	8
Low	7	7

Figure 6. Results of the task "What will happen if this natural resource disappears or becomes excessive?"

5.8. Picture-Based Task: "What Is the Best Way to Prevent the Disappearance of Natural Resources?"

In the final block of picture-based exercises, children were presented with illustrations of behaviors either leading to conservation or to the disappearance of resources. They were asked to select the appropriate behavior. This task proved difficult for 8 children in the experimental group and 7 in the control group, who all showed low-level results. Twelve children in each group demonstrated a medium level, while 6 children in the control group and 4 in the experimental group demonstrated a high level. Very few children reached the very high level.

Table 7. Results of the task "What is the best way to prevent the disappearance of natural resources?"

Level of knowledge	Experimental group (n=26)	Control group (n=26)
Very High	2	1
High	4	6
Medium	12	12
Low	8	7

Figure 7. Results of the task "What is the best way to prevent the disappearance of natural resources?"

5.9. Diagnostic Observation

The final stage of the diagnostic assessment involved structured observation of children's daily behavior in relation to resource-saving (water, electricity, heat, waste disposal). This allowed the researchers to determine real-life manifestations of resource-saving culture. The results indicated that for the majority of children, a resource-saving culture had not yet formed. Eleven children in the control group and eight in the experimental group demonstrated low-level results.

Table 8. Results of diagnostic observation of children's behavior

Level of knowledge	Experimental group (n=26)	Control group (n=26)
Very High	3	1
High	9	6
Medium	6	8
Low	8	11

Figure 8. Results of diagnostic observation of children's behavior.

5.10. General Results of the Diagnostic Study

Upon completion of the diagnostics, a general summary was compiled. The findings indicated that the two groups were at approximately equal levels of development, with differences being minor and statistically insignificant.

Table 9. Summary of diagnostics of the formation of a resource-saving culture

Level of knowledge	Experimental group (n=26)	Control group (n=26)
Very High	4	3
High	11	13
Medium	7	7
Low	4	3

Figure 9. Summary of diagnostics of the formation of a resource-saving culture.

6. Discussion

The diagnostic results show that children in both the experimental and control groups have similar levels of formation of resource-saving culture, with only slight differences. Most children demonstrated medium or low levels of knowledge and behavior regarding resource conservation. While some children were able to articulate the importance of resource-saving and demonstrate appropriate behavior, the majority lacked a deep understanding of the finiteness of natural resources and failed to consistently apply resource-saving practices in everyday life.

These findings align with previous studies in the field (Galkina, 2008; Klimkovich et al., 2003; Chabanenko, 2015), which emphasize that while preschool children are capable of acquiring basic knowledge about environmental conservation, systematic pedagogical methods are required to ensure the internalization of resource-saving habits. The results also indicate that picture-based tasks and structured observation are effective tools for identifying children's comprehension levels and practical behaviors.

Based on the conducted diagnostic study, it can be concluded that the current level of formation of a resource-saving culture among older preschool children is insufficient. Both experimental and control groups showed similar results, with the majority of children positioned at medium and low levels. These outcomes highlight the need for the development and implementation of specialized pedagogical methods and programs aimed at fostering resource-saving knowledge, attitudes, and behaviors during the preschool stage. Such interventions should combine cognitive, emotional, and practical components to ensure that children not only understand the importance of saving resources but also consistently demonstrate corresponding behaviors in daily life.

Findings

The study was conducted at the State Preschool Education Institution "Nursery–Kindergarten No. 244 of Minsk," involving 52 children from senior preschool groups divided into experimental and control cohorts. The diagnostic phase used three main tools: (1) a diagnostic conversation to assess children's knowledge of natural resources and awareness of the need for conservation; (2) tasks with pictures, adapted to children's visual-imaginative thinking, supported by oral explanations; and (3) purposeful diagnostic observations in a familiar environment to avoid stress or anxiety.

Key findings include:

- A significant proportion of children demonstrated only partial understanding of what natural resources are.
- Many children expressed awareness of the importance of saving resources but lacked consistent behavioral readiness to apply this understanding.

- A smaller group of children showed clear readiness to engage in resource-saving practices, which correlated with prior exposure to environmental education at home or preschool.

The data indicate that the formation of resource-saving culture in preschool children is uneven and requires systematic pedagogical interventions. This confirms the need for integrated educational programs that develop both cognitive awareness and practical behavioral skills.

7. Conclusion

The present study has provided a comprehensive diagnostic analysis of the level of formation of a resource-saving culture among older preschool children. The results obtained demonstrate that, despite the increasing global importance of rational resource use, the culture of resource conservation is not yet sufficiently developed at this age stage. Both the experimental and control groups revealed comparable outcomes, with the majority of children displaying medium and low levels of knowledge and behavior regarding natural resource conservation. Only a small proportion of participants were able to independently articulate the concept of natural resources, justify the need for their preservation, and demonstrate consistent resource-saving behaviors in everyday activities.

The findings suggest that the preschool period, while recognized as a critical stage for the formation of personality traits and social behaviors, currently lacks systematic and targeted pedagogical interventions aimed at instilling a culture of resource-saving. The difficulty that many children encountered in tasks requiring logical reasoning (e.g., predicting the consequences of resource depletion or selecting behaviors that promote conservation) highlights the necessity of developing age-appropriate didactic tools. Furthermore, the results of diagnostic observation confirmed that, although children may express partial awareness in structured settings, their spontaneous behaviors often fail to reflect sustainable practices, reinforcing the need for continuous educational reinforcement.

From a theoretical perspective, the outcomes confirm the relevance of integrating economic and ecological education into early childhood pedagogy, as emphasized by both classical thinkers (Aristotle, Xenophon, Plato) and modern researchers in psychology and pedagogy. The close relationship between individual economic maturity and societal development underscores the importance of beginning resource-saving education as early as preschool. Without a deliberate and consistent methodological framework, children's understanding remains fragmented, and their behaviors inconsistent.

From a practical standpoint, the study underscores the urgent requirement to design and implement specialized educational programs that combine cognitive, emotional, and behavioral components of resource-saving. Such programs should employ interactive, visual, and activity-based learning methods to match the developmental characteristics of preschool children. In addition, cooperation between families and preschool institutions is essential to ensure that the principles of resource conservation are consistently modeled and reinforced in both educational and home environments.

In conclusion, the diagnostic study clearly indicates that while preschool children demonstrate potential for developing a resource-saving culture, their current level remains inadequate. The results justify the need for the creation of targeted pedagogical strategies, methodological guidelines, and diagnostic tools to promote sustainable attitudes and behaviors. This will contribute not only to the personal development of children but also to the long-term formation of environmentally responsible citizens, capable of addressing the ecological and economic challenges of the modern world.

Ethical Considerations

The study adhered to ethical principles of pedagogical research. Participation was voluntary, and informed consent was obtained from the children's parents or legal guardians. The diagnostic activities were conducted in a familiar and supportive environment to avoid stress, fear, or discomfort. Confidentiality of personal data was ensured, and the study design prioritized the psychological well-being of all participants.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgments

The authors express their gratitude to the administration and staff of State Preschool Education Institution "Nursery–Kindergarten No. 244 of Minsk" for their cooperation and support in conducting the research, as well as to the children and their families for their participation.

Conflict of Interest

The authors declare no conflict of interest.

References

1. Roslotseva, I.P. (2010). *Alphabet of thrift for preschoolers*. Mozyr: Sodeistvie.
2. Galkina, S.D. (2008). *For children about energy saving*. Minsk: Zorny Verasen.
3. Gordeeva, D.S. (2010). *Formation of careful attitude to nature in preschool children* (Doctoral dissertation abstract). Chelyabinsk.
4. Klimkovich, L.B., Belko, E.S., & Galkina, S.D. (2003). *Alphabet of "Beregosh": A methodological guide for introducing preschool children to energy saving*. Minsk: Tekhnalogiya.
5. Chabanenko, L. (2015). Education of the basics of energy and resource saving. *Praleska*, (6), 77–80.
6. Aristotle. (2009). *Nicomachean ethics* (W. D. Ross, Trans.). Oxford University Press. (Original work published ca. 350 BCE)
7. Plato. (2008). *The Republic* (D. Lee, Trans.). Penguin Classics. (Original work published ca. 375 BCE)
8. Xenophon. (1994). *The economics*. Cornell University Press. (Original work published ca. 362 BCE)
9. Bronfenbrenner, U. (1994). Ecological models of human development. *International Encyclopedia of Education*, 3(2), 37–43.
10. Galkina, S. D. (2008). *For children about energy saving*. Minsk: Zorny Verasen.
11. Gordeeva, D. S. (2010). *Formation of careful attitude to nature in preschool children* (Doctoral dissertation abstract). Chelyabinsk State Pedagogical University.
12. Roslotseva, I. P. (2010). *Alphabet of thrift for preschoolers*. Mozyr: Sodeistvie.
13. Klimkovich, L. B., Belko, E. S., & Galkina, S. D. (2003). *Alphabet of "Beregosh": A methodological guide for introducing preschool children to energy saving*. Minsk: Tekhnalogiya.
14. Chabanenko, L. (2015). Education of the basics of energy and resource saving. *Praleska*, (6), 77–80.
15. Hedefalk, M., Almqvist, J., & Östman, L. (2015). Education for sustainable development in early childhood education: A review of the research literature. *Environmental Education Research*, 21(7), 975–990. https://doi.org/10.1080/13504622.2014.971716
16. Siraj-Blatchford, J., Smith, K. C., & Samuelsson, I. P. (2010). Education for sustainable development in the early years. *International Journal of Early Childhood*, 42(2), 103–113. https://doi.org/10.1007/s13158-010-0014-x
17. Davis, J. M. (2014). *Young children and the environment: Early education for sustainability* (2nd ed.). Cambridge University Press.
18. Tilbury, D., & Wortman, D. (2008). Education for sustainability in early childhood. *International Journal of Early Childhood*, 40(1), 9–20. https://doi.org/10.1007/BF03165978
19. Boyd, D. (2018). The role of early childhood education in supporting environmental sustainability. *Early Child Development and Care*, 188(5–6), 613–625. https://doi.org/10.1080/03004430.2017.1393000
20. Elliott, S., & Davis, J. (2009). Exploring the resistance: An Australian perspective on educating for sustainability in early childhood. *International Journal of Early Childhood*, 41(2), 65–77. https://doi.org/10.1007/BF03168882
21. Ärlemalm-Hagsér, E., & Sandberg, A. (2011). Sustainable development in early childhood education: In-service students' comprehension of the concept. *Environmental Education Research*, 17(2), 187–200. https://doi.org/10.1080/13504622.2010.522704
22. Louv, R. (2008). *Last child in the woods: Saving our children from nature-deficit disorder*. Algonquin Books.
23. White, R. (2004). Young children's relationship with nature: Its importance to children's development and the earth's future. *White Hutchinson Leisure & Learning Group*, 1(2), 1–12.
24. Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
25. Piaget, J. (1952). *The origins of intelligence in children* (M. Cook, Trans.). International Universities Press.

Science, Education and Innovations in the Context of Modern Problems

Issue 11, Vol. 8, 2025

Title of research article

An Econometric Analysis of the Dynamic Impact of Investment Expenditures on Economic Growth in Algeria: Evidence from the ARDL Approach (1992–2022)

Touba Dalila
University of Biskra
Algeria
E-mail: d.touba@univ-biskra.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Public expenditures; investment expenditures; economic growth; ARDL model; Algeria

Abstract

This study examines the dynamic relationship between investment expenditures and economic growth in Algeria over the period 1992–2022. The research highlights the strategic importance of investment spending in resource-dependent economies and situates Algeria's fiscal trajectory within broader theoretical frameworks, including classical and endogenous growth models.

Methodologically, the study employs the Autoregressive Distributed Lag (ARDL) model to assess both the short-run and long-run linkages between investment expenditures and gross domestic product (GDP) growth. The results reveal a statistically significant positive relationship: a 1% increase in investment expenditures is associated with a 0.11% rise in GDP growth. The findings demonstrate long-run complementarities between investment policies and sustainable growth, alongside short-run adjustments that reflect gradual transmission of expenditure shocks to growth outcomes.

The policy implications underscore the necessity for Algeria to consolidate stable investment frameworks, strengthen resource allocation efficiency, and pursue economic diversification beyond hydrocarbons. Investment in infrastructure, human capital, and technological capacity is identified as a critical pathway toward resilience against external shocks and sustainable development.

Citation. Dalila T. (2025). An Econometric Analysis of the Dynamic Impact of Investment Expenditures on Economic Growth in Algeria: Evidence from the ARDL Approach (1992–2022). *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 974–983. https://doi.org/10.56352/sei/8.11.78
JEL Codes: F43, H50

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.01.2025 | Accepted: 20.06.2025 | Published: 16.09.2025 (available online)

1. Introduction

Economic growth represents one of the most critical indicators of a nation's economic performance, standard of living, and development trajectory. Consequently, it has been the focal point of extensive research exploring determinants and policy levers. Among these, public expenditures constitute a fundamental fiscal instrument influencing growth, though their impact varies depending on country-specific structures and resource bases.

In Algeria, successive governments have adopted large-scale expenditure programs to stimulate growth and reduce structural vulnerabilities. These initiatives reflect both developmental imperatives and the challenges of a hydrocarbon-dependent economy. Against this backdrop, this study addresses the following central research question:

How do investment expenditures affect economic growth in Algeria during the period 1992–2022?

To guide the investigation, three sub-questions are posed:

1. What are the classifications of public expenditures in Algeria?
2. To what extent have investment expenditures contributed to economic growth?
3. What is the nature of the relationship between investment expenditures and growth in the Algerian context?

The objectives are fourfold:

- To delineate the theoretical foundations of public expenditures and economic growth.
- To classify and analyze public expenditures in Algeria.
- To quantify the impact of investment expenditures on economic growth between 1992–2022.
- To provide policy insights for future fiscal planning.

The remainder of the article is structured as follows. Section 2 reviews the conceptual underpinnings of public and investment expenditures. Section 3 presents the methodological approach, including the ARDL framework. Section 4 discusses the empirical results. Section 5 outlines policy implications, while Section 6 concludes.

2. Conceptual Framework: Investment Expenditures and Economic Growth

2.1 Public Expenditures

Public expenditures are generally defined as the financial resources disbursed by the state or its institutions to meet collective needs and promote socio-economic objectives. They represent cash outflows from the state treasury authorized by legislative bodies to provide public goods and services (Mustafa, 2007). Scholars emphasize that such expenditures embody both economic and social dimensions, aiming to secure public welfare and stimulate development (Mokhtari & Haddad, 2021; Youcef, 2023).

Over time, public expenditures have displayed a tendency to increase, driven by multiple factors: expansion of public sector activities, higher spending on housing, education, health, and social protection; subsidies for production and consumption; rising public sector wages; increasing defense budgets; and the burden of debt servicing (Lahcen, 2013).

2.2 Classification of Public Expenditures

No single classification system applies universally, as countries adopt varied approaches depending on policy priorities and institutional contexts (Youcef, 2023). Commonly, expenditures are categorized as follows:

- **By purpose:**
    - Administrative expenditures: resources allocated to the functioning of state institutions.
    - Social expenditures: transfers aimed at social welfare, including subsidies and pensions.
    - Economic expenditures: investments targeting economic activity and production.
- **By recurrence:**

- Regular expenditures: periodic allocations such as salaries, maintenance, and social services.
- Extraordinary expenditures: irregular spending, including large-scale investment projects or disaster responses.

- **By economic impact:**
  - Current expenditures: recurrent spending necessary for public administration.
  - Capital expenditures: outlays that contribute to capital formation and production capacity, including infrastructure and investment projects.

2.3 Investment Expenditures and Growth

Investment expenditures, as a subset of public spending, are particularly significant in growth theory. According to classical and Keynesian perspectives, such expenditures stimulate aggregate demand and employment, while endogenous growth models highlight their role in fostering innovation, human capital, and long-term productivity.

In Algeria, investment expenditures have historically focused on infrastructure, housing, and industrial development, serving as a mechanism for diversifying the economy beyond hydrocarbons. Their effectiveness, however, depends on institutional efficiency, governance, and the absorptive capacity of the domestic economy.

2.1.2 Classification of Public Expenditures in Algeria

The classification of public expenditures in Algeria has evolved through successive financial legislations, reflecting institutional reforms and shifts in fiscal governance.

a) Classification under Law 84-17 (1984)

According to Article 20 of Finance Law No. 84-17, public expenditures were initially classified into **management expenditures** and **equipment (investment) expenditures**.

- **Management expenditures** (Article 24) included:
  - Public debt burdens and deductions from revenues.
  - Allocations of public authorities.
  - Expenditures related to operating resources.
  - Public interventions.
- **Equipment (investment) expenditures** (Article 35) comprised:
  - Direct investments undertaken by the state.
  - Investment subsidies granted by the state.
  - Other capital-related expenditures.

This classification reflected Algeria's early post-independence development policies, which emphasized centralized planning and state-led industrialization.

b) Classification under Law 18-15 (2018)

Following the 2018 budgetary reform, Finance Law No. 18-15 introduced a more modern classification system, aligning Algeria with international standards of fiscal transparency and performance-based budgeting. Expenditures are now categorized by:

- **Activity:** encompassing programs and their subdivisions.
- **Economic purpose:** including chapters and sections of expenditure.
- **Major state functions:** assigning responsibilities to specific sectors.
- **Administrative responsibility:** distribution of appropriations among ministries and institutions.

Article 29 further details the composition of economic expenditures, which include: user expenses, management expenses, investment expenses, transfer payments, public debt servicing, financial operations, and contingency expenditures.

2.2 Economic Growth

Economic growth is broadly defined as a sustained increase in a country's gross domestic product (GDP), accompanied by improvements in real per capita income (Dardouri & Sararma, 2021). More specifically, it reflects an expansion of productive capacity through increased resource utilization, technological progress, and structural transformation (Mohammed, 2023).

2.2.1 Types of Economic Growth

According to Hafsi (2022), economic growth can be categorized into three main types:

- **Natural growth:** evolving through historical processes, e.g., transitions from feudalism to capitalism.
- **Transient growth:** driven by temporary or external shocks, such as resource booms, that dissipate over time.
- **Planned growth:** stemming from deliberate national development strategies, dependent on planning efficiency, institutional capacity, and broad societal participation.

2.2.2 Determinants of Economic Growth

Key determinants of growth include (Abdullah & Chikhaoui, 2022):

- **Labor:** the quantitative and qualitative contribution of the workforce, influenced by demographics and productivity.
- **Capital:** accumulation and effective utilization of physical, financial, and human capital resources.
- **Technological development:** the most critical determinant, facilitating innovation, efficiency, and competitiveness across sectors.

3. Relationship Between Investment Expenditures and Economic Growth in Algeria

3.1 Model Specification

To empirically assess the link between investment expenditures and economic growth in Algeria (1992–2022), the study employs the **Autoregressive Distributed Lag (ARDL)** framework introduced by Pesaran et al. (2001). This approach is particularly suitable for small-sample studies involving mixed integration orders [I(0) and I(1)].

The analysis draws upon annual data from the Bank of Algeria and the World Bank, ensuring robustness and comparability. The ARDL model specification is expressed as:

ΔYt=α+∑i=1pβiΔYt−i+∑j=0qγjΔXt−j+ϕYt−1+θXt−1+εt\Delta Y_t = \alpha + \sum_{i=1}^{p}\beta_i \Delta Y_{t-i} + \sum_{j=0}^{q}\gamma_j \Delta X_{t-j} + \phi Y_{t-1} + \theta X_{t-1} + \varepsilon_tΔYt=α+i=1∑pβiΔYt−i+j=0∑qγjΔXt−j+ϕYt−1+θXt−1+εt

Where YtY_tYt represents GDP growth, XtX_tXt represents investment expenditures, and the coefficients capture both short-run and long-run relationships.

3.2 Empirical Results

3.2.1 Unit Root Test

Prior to estimation, the stationarity of the time series was tested using the **Phillips–Perron (PP) test**. Results (Table 1) indicate that both GDP and investment expenditure series are **non-stationary at levels** but become **stationary at first differences**, implying integration of order I(1).

Table 1. Unit Root Test Results (Phillips–Perron Test)

Variables	At Level I(0) (No const., No trend)	At Level I(0) (Const.)	At Level I(0) (Const. & Trend)	At First Diff. I(1) (No const., No trend)	At First Diff. I(1) (Const.)	At First Diff. I(1) (Const. & Trend)	Result
LGDP	1.5229 (0.9654)	-1.0547 (0.9203)	-0.9748 (0.7492)	-3.5730 (0.0009)	-4.3654 (0.0088)	-4.0767 (0.0038)	I(1)
LINVEXP	1.8019 (0.9803)	-1.0061 (0.9281)	-1.5853 (0.4775)	-4.3819 (0.0001)	-4.8447 (0.0028)	-4.7328 (0.0007)	I(1)

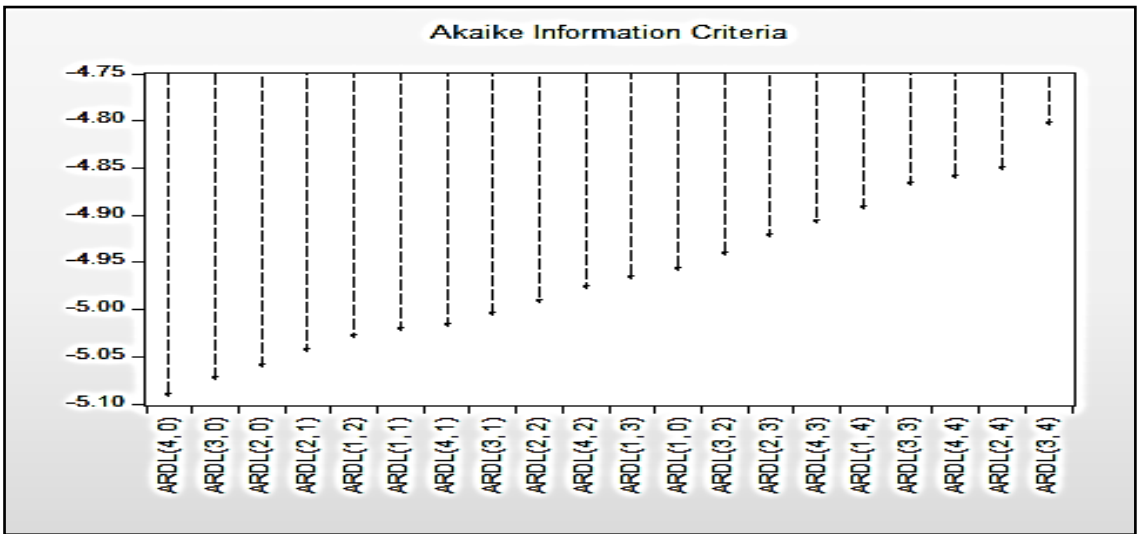
Note: Probability values in parentheses; Source: Author's calculations using EViews 10.

These results satisfy the ARDL preconditions, allowing estimation with a mixture of I(0) and I(1) variables.

3.2.2 Lag Selection

Optimal lag selection was determined using the **Akaike Information Criterion (AIC)**. As shown in Figure 1, the ARDL(4,0) specification yielded the lowest AIC value, confirming its suitability for modeling the dynamic relationship.

Figure 1: : Results of The Optimal Lag periodsTest



Source: Eviews 10 output

3.2.3 Cointegration Test Using the Bounds Approach

To determine whether a long-run equilibrium relationship exists between investment expenditures and economic growth, the **Bounds cointegration test** was applied. The results, presented in Table 2, show that the calculated F-statistic (7.124696) exceeds the upper and lower critical values at the 1%, 2.5%, 5%, and 10% significance levels. Accordingly, the null hypothesis of no cointegration is rejected in favor of the alternative, confirming the existence of a **long-run equilibrium relationship** between the dependent and independent variables.

Table 2. Bounds Cointegration Test Results

Test Statistic	Value	K
F-Statistic	7.124696	1

Significance Level	I(0) Bound	I(1) Bound
10%	3.02	3.51
5%	3.62	4.16
2.5%	4.18	4.79
1%	4.94	5.58

Source: Author's calculations using EViews 10.

3.3 Long-Run and Short-Run Relationship Estimates

3.3.1 Long-Run Relationship

Table 3 reports the long-run coefficients estimated under the ARDL model. The results confirm a **positive and statistically significant effect** of investment expenditures on economic growth. Specifically, a 1% increase in investment expenditures leads to a 0.11% increase in GDP. While the coefficient is modest, it demonstrates that investment spending in Algeria contributes to income expansion and long-term growth dynamics.

Table 3. Long-Run Relationship Estimates

Variable	Coefficient	SE	T-Statistic	Probability
LINVEXP	0.119017	0.007921	15.02571	0.0000
Constant	12.06594	0.058248	207.1488	0.0000

Source: Author's calculations using EViews 10.

3.3.2 Short-Run Relationship

Table 4 presents the short-run dynamics derived from the error correction representation of the ARDL model. The coefficient of the error correction term (CointEq(-1)) is **negative and statistically significant (-0.5935; $p < 0.01$)**, confirming the existence of an adjustment mechanism. This implies that approximately 59.35% of short-term disequilibria are corrected each year to restore the system to long-run equilibrium.

By contrast, investment expenditures exert no statistically significant effect on growth in the short run, underscoring the delayed nature of investment payoffs in the Algerian context.

Table 4. Short-Run Relationship Estimates

Variable	Coefficient	SE	T-Statistic	Probability
D(LGDP(-1))	0.248729	0.143000	1.739366	0.0966
D(LGDP(-2))	0.099747	0.154316	0.646385	0.5250
D(LGDP(-3))	0.285264	0.174389	1.635787	0.1168
CointEq(-1)	-0.593524	0.122671	-4.838350	0.0001

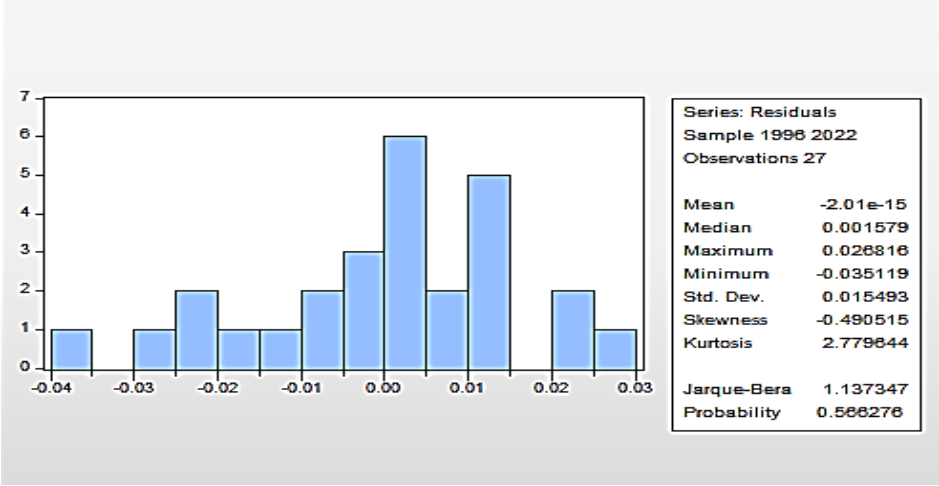
Source: Author's calculations using EViews 10.

3.4 Diagnostic Tests

3.4.1 Normality of Residuals

The **Jarque–Bera (JB) test** was applied to evaluate the normality of the residuals. Figure 2 illustrates that the JB statistic (1.13) is lower than the χ^2 critical value (5.99) at the 5% significance level. Furthermore, the probability value (0.56) exceeds the conventional thresholds, confirming that the model residuals are **normally distributed**, thereby satisfying one of the core assumptions of the ARDL framework.

Figure 2: Results Test of the normality distribution of residuals



Source: Eviews 10 output

3.4.2 Autocorrelation Test of Errors

The Breusch–Godfrey LM test was employed to detect the presence of serial correlation in the residuals. As reported in Table 5, the F-statistic (0.279386) and the Chi-square probability (0.6800) both exceed the 5% significance level. Therefore, the null hypothesis of no autocorrelation cannot be rejected, confirming that the model residuals are **free from serial correlation.**

Table 5. Autocorrelation Test of Errors (LM Test)

Test Statistic	Value	df	Probability
F-Statistic	0.279386	(2,19)	0.7593

Test Statistic	Value	df	Probability
Obs*R-squared	0.771361	(2)	0.6800

Source: Author's calculations using EViews 10.

3.4.3 Heteroskedasticity Test

The Breusch–Pagan–Godfrey test was applied to examine the homoscedasticity of residuals. The results in Table 6 indicate that the F-statistic (0.373600) is statistically insignificant (p = 0.8610), suggesting the absence of heteroskedasticity. Thus, the model satisfies the assumption of constant variance in the residuals.

Table 6. Heteroskedasticity Test Results (Breusch–Pagan–Godfrey)

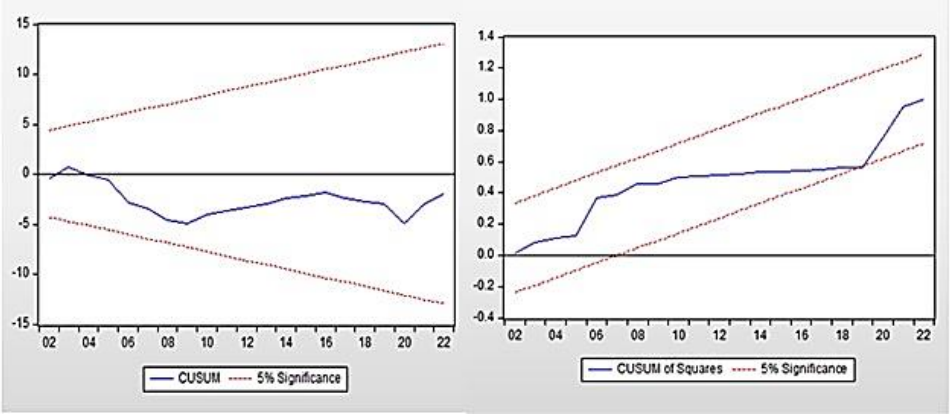
Test Statistic	Value	df	Probability
F-Statistic	0.373600	(5,21)	0.8610
Obs*R-squared	2.205525	(5)	0.8200
Scaled explained SS	1.187207	(5)	0.9461

Source: Author's calculations using EViews 10.

3.4.4 Structural Stability Test

To evaluate the stability of the estimated parameters over the sample period, the **CUSUM and CUSUM of Squares** tests were conducted. Figure 3 illustrates that the plots remained within the 5% critical bounds, thereby confirming that the model is **structurally stable** and reliable for inference throughout the study period.

Figure 3: Structural Stability Tests – CUSUM and CUSUMSQ Plots



Source: Author's calculations using EViews 10.

4. Conclusion and Policy Recommendations

This study analyzed the dynamic impact of investment expenditures on economic growth in Algeria for the period 1992–2022 using the **Autoregressive Distributed Lag (ARDL)** approach. Several conclusions emerge:

1. **Model reliability:** Diagnostic tests (normality, autocorrelation, heteroskedasticity, and stability) confirm the robustness and validity of the estimated ARDL model.

2. **Error correction mechanism:** The negative and statistically significant coefficient of the error correction term (-0.5935) indicates that approximately 59.35% of disequilibria are corrected annually, ensuring a rapid return to long-run equilibrium.

3. **Long-run effect:** Investment expenditures exert a positive and statistically significant effect on economic growth. A 1% increase in investment expenditures raises GDP by 0.11%. However, the elasticity is relatively weak, underscoring the need for complementary growth-enhancing policies.

4. **Short-run effect:** No statistically significant relationship was found between investment expenditures and growth in the short run, reflecting the delayed realization of investment benefits in Algeria's economy.

Policy Recommendations:

- Rationalize investment expenditures, prioritizing sectors with higher productivity and stronger growth spillovers (infrastructure, education, and technology).

- Strengthen oversight and accountability mechanisms to ensure efficient allocation and disbursement of public resources.

- Promote economic diversification by reducing overreliance on hydrocarbons and channeling investments into non-oil sectors.

- Improve institutional quality and governance to enhance the multiplier effect of public investment.

5. Findings

1. **Positive Long-Run Relationship:** Investment expenditures were found to have a long-run elasticity of 0.11, confirming their contribution to Algeria's GDP performance.

2. **Short-Run Dynamics:** Short-run effects are limited, though the strong error correction mechanism ensures that shocks are quickly corrected.

3. **Policy Implications:** Effective resource allocation, diversification of investment, and institutional reforms are required to amplify the modest long-run impact of investment on growth.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Ethical Considerations

This study relies exclusively on secondary macroeconomic data sourced from publicly accessible databases, including the World Bank, the Bank of Algeria, and the International Monetary Fund (IMF). No human or animal subjects were involved, and therefore ethical approval was not required. All data sources are properly acknowledged and cited.

Acknowledgments

The author expresses gratitude to colleagues at the University of Biskra for their insightful feedback on the econometric framework and research design. Sincere appreciation is also extended to the anonymous reviewers for their valuable comments, which significantly improved the quality of this manuscript.

Conflict of Interest

The author declares no conflicts of interest regarding the publication of this study.

References

1. Abdullah, N., & Chikhaoui, A. (2022). The impact of oil price fluctuations on long-term economic growth in Algeria during the period 1990–2020: An econometric study using the autoregressive distributed lag model (ARDL). *Journal of Economic Development, 7*(1), 45–63.
2. Dardouri, R., & Sararma, R. D. (2021). The impact of oil prices on economic growth in Algeria for the period 1970–2020: An econometric study using the ARDL model. *Journal of Economic and Financial Studies, 14*(1), 77–94.
3. Hafsi, R. (2022). The effect of oil prices and exchange rates on economic growth in Algeria using the ARDL model during the period 1980–2018. *Journal of Humanities and Social Sciences, 8*(2), 115–129.
4. Lahcen, D. (2013). The state budget deficit and its treatment in the positive economy. *Journal of Economic and Administrative Research, 4*(1), 201–214.
5. Mohammed, M. (2023). Testing correlation in the long term between economic growth and taxation in Algeria during 1980–2021 using the Johansen cointegration method. *Journal of Quantitative Economic Studies, 9*(1), 55–71.
6. Mokhtari, R., & Haddad, M. (2021). The impact of oil price fluctuations on the general budget in Algeria during 1990–2019. *El-Maqrizi for Economic and Financial Studies, 5*(2), 310–326.
7. Mustafa, A.-F. (2007). *Public finance management*. Amman, Jordan: Ossama Publishing.
8. Youcef, D. (2023). Classification and distribution of public expenditures in Algeria: A comparative study between the previous budget system (Law 84-17) and the budgetary reform established by Organic Law 18-15. *Journal of Thought and Political Law, 7*(2), 265–283.
9. Law No. 18-15. (2018, September 2). *Official Journal of the Algerian Republic, 53,* 11–12.
10. Law No. 84-17. (1984, July 10). *Official Journal of the Algerian Republic, 28,* 1042–1043.
11. Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics, 16*(3), 289–326. https://doi.org/10.1002/jae.616
12. Barro, R. J. (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economics, 106*(2), 407–443. https://doi.org/10.2307/2937943
13. Devarajan, S., Swaroop, V., & Zou, H. F. (1996). The composition of public expenditure and economic growth. *Journal of Monetary Economics, 37*(2–3), 313–344. https://doi.org/10.1016/S0304-3932(96)90039-2
14. Solow, R. M. (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics, 70*(1), 65–94. https://doi.org/10.2307/1884513
15. World Bank. (2023). *World Development Indicators*. Washington, DC: World Bank. Retrieved from https://databank.worldbank.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Administrative Oversight as a Strategic Driver of Organizational Efficiency in Sports Institutions: Empirical Evidence from the Directorate of Youth and Sports of Biskra

Aoun Mohamed Imad Eddine
Laboratory of Modern Sciences in Physical and Sport Activities, Institute of Science and Technology of Physical and Sport Activities, University of Bouira
Bouira, 10000, Algeria
E-mail: m.aoun@univ-bouira.dz

Khiri Djamel
Laboratory of Modern Sciences in Physical and Sport Activities, Institute of Science and Technology of Physical and Sport Activities, University of Bouira
Bouira, 10000, Algeria
E-mail: dr.khiri@univ-bouira.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Administrative oversight, organizational efficiency, human resources management, governance, sports institutions, Algeria.

Abstract

Administrative oversight constitutes a cornerstone of effective governance and performance enhancement in public institutions, particularly within the sports sector, where resource optimization, human capital management, and transparency are critical. This study investigates the role of administrative oversight in developing organizational efficiency in the Directorate of Youth and Sports of Biskra. Employing a descriptive-analytical approach, the research relied on a structured questionnaire distributed to a randomly selected sample of 35 employees working within the directorate.

The results underscore the significant role of administrative oversight in improving organizational performance across several dimensions. Oversight mechanisms positively influenced decision-making accuracy, improved coordination between administrative units, and strengthened governance practices. Furthermore, the findings highlight the capacity of oversight to enhance organizational adaptability to internal and external challenges, thereby reinforcing institutional resilience. However, challenges persist in reducing resource misallocation and promoting transparency in reporting mechanisms.

The study concludes that strengthening oversight practices through digital tools, systematic employee training, and flexible procedural mechanisms are imperative for advancing organizational efficiency. The results provide both theoretical insights into the relationship between oversight and efficiency, as well as practical recommendations for policymakers and institutional leaders seeking to reinforce accountability and optimize performance in sports institutions.

Citation. Aoun Mohamed I.E., Khiri D. (2025). Administrative Oversight as a Strategic Driver of Organizational Efficiency in Sports Institutions: Empirical Evidence from the Directorate of Youth and Sports of Biskra. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 984–995. https://doi.org/10.56352/sei/8.11.79

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.08.2025 | Accepted: 09.09.2025 | Published: 16.09.2025 (available online)

1. Introduction:

Administrative control is a cornerstone of effective organizational management, operating synergistically with planning, organizing, and directing to form an integrated framework that ensures the efficient and effective attainment of organizational objectives. In recent decades, administrative control has undergone significant qualitative evolution, transitioning from its traditional role of performance monitoring and deviation detection to a strategic mechanism that enhances institutional performance, improves operational quality, and supports the implementation of modern governance principles.

The contemporary administrative landscape is characterized by rapid transformations driven by technological advancements, intensified competition, and evolving societal expectations. These dynamics necessitate the adoption of adaptive, flexible, and proactive control systems capable of addressing emerging challenges and mitigating potential risks. Such systems are critical for organizations to maintain resilience and achieve strategic goals in an increasingly complex environment.

Sports institutions are particularly significant due to their multifaceted contributions to public health, social development, and economic and athletic achievements at both local and global levels. Beyond their traditional recreational role, sports organizations have emerged as a global industry, bolstering national identity, enhancing quality of life, and attracting investment opportunities. However, these institutions face complex challenges, including financial constraints, limited managerial expertise, frequent legislative changes, and growing societal expectations for exceptional performance. These pressures underscore the need for a critical reevaluation of conventional management practices and the adoption of modern, evidence-based managerial models grounded in transparency, innovation, and operational efficiency (Charifi & Al-Aidani, 2017).

Organizational efficiency is a critical determinant of success for sports institutions, reflecting their ability to achieve objectives with minimal resource expenditure while maximizing quality. This is accomplished through the optimal allocation of human and material resources, the refinement of internal processes, and enhanced coordination among organizational units. Efficiency is pivotal in enabling institutions to adapt to environmental changes, meet societal expectations, and ensure sustainability in increasingly competitive contexts. Within this framework, administrative control serves as a vital mechanism for enhancing efficiency by monitoring performance, optimizing resource utilization, and addressing deviations. These functions collectively improve managerial quality, enhance decision-making, and foster innovation within the institution (Al-Munif, 1983, p. 350).

Administrative control in sports institutions is inherently multidimensional, encompassing financial performance monitoring, evaluation of human competencies, assessment of coordination among administrative structures, and assurance of compliance with legal and ethical standards. For example, effective administrative oversight can strengthen financial management in sports clubs by minimizing waste and enhancing fiscal sustainability. Similarly, it supports coaches and administrators in achieving athletic and organizational goals through constructive feedback and strategic decision-making guidance. However, the effectiveness of administrative oversight hinges on adopting a balanced approach that prioritizes improvement and development over punitive measures. This requires scientifically grounded and methodical strategies to ensure the attainment of desired outcomes (Boussak et al., 2021).

Sports institutions face mounting challenges, including inadequate infrastructure, shortages of qualified personnel, and fluctuations in funding and sponsorship policies. These issues necessitate the redesign of oversight systems to be more adaptive and responsive. Traditional control mechanisms, which primarily focus on error detection, are often inadequate in dynamic environments that require proactive problem-solving and innovative solutions. Consequently, this study investigates the relationship between administrative control and organizational efficiency in sports institutions, with a focus on how control systems enhance organizational performance, improve managerial quality, and promote institutional sustainability within a complex and competitive sports landscape.

The central research question is: To what extent can current oversight systems effectively address organizational needs and enhance efficiency in sports institutions? Many sports institutions rely on traditional regulatory models that emphasize punitive measures over constructive guidance, limiting their capacity to improve performance and achieve sustainability. Moreover, the lack of adaptive and flexible control systems exacerbates challenges such as poor coordination among administrative units, inefficient resource utilization, and delayed decision-making. Thus, the research problem is articulated as follows: **To what extent does administrative control contribute to organizational efficiency in sports institutions, particularly in addressing the challenges of a dynamic and competitive environment?**

Building upon the central research problem, this study addresses the following subsidiary research questions:

- What are the regulatory systems currently implemented in sports institutions, and how do these systems influence organizational performance?
- What factors facilitate or impede the effectiveness of administrative control in enhancing organizational efficiency?
- How can administrative oversight strengthen transparency and governance within sports institutions?

Study hypotheses:

General Hypothesis: Administrative control significantly enhances organizational efficiency in sports institutions by optimizing resource utilization and improving operational performance.

Subsidiary hypotheses:

- Effective administrative control strengthens organizational efficiency in sports institutions by improving coordination and minimizing operational deviations.
- The effectiveness of administrative control depends on its flexibility and adaptability to dynamic environmental conditions.
- Regulatory systems that prioritize guidance and continuous monitoring enhance the quality of decision-making in sports institutions.

Objectives of the study:

- To analyze the role of administrative control in enhancing organizational efficiency within sports institutions.
- To evaluate the effectiveness of regulatory systems implemented in sports institutions in achieving organizational objectives.
- To identify key factors influencing the effectiveness of administrative control in sports institutions.
- To examine the relationship between administrative oversight and the quality of internal coordination and decision-making processes.

The importance of the study:

This study holds significant theoretical and practical value. Theoretically, it addresses a critical knowledge gap concerning the relationship between administrative control and organizational efficiency in sports institutions, an area that has received limited scholarly attention compared to other sectors. It also provides a conceptual framework to guide future research in sports management and organizational studies.

Practically, the study offers evidence-based recommendations for decision-makers in sports institutions to enhance organizational performance, promote transparency, and ensure long-term sustainability. Furthermore, it contributes to the development of modern, adaptive control systems that align with principles of good governance, innovation, and competitiveness in the sports sector.

2. Defining concepts and terms:

- **Administrative Control**: Administrative control is a core function of the administrative process, designed to monitor operations, evaluate actual performance against planned objectives, and apply control standards. This process identifies positive achievements to be reinforced and negative deviations requiring correction, thereby ensuring the attainment of organizational goals (Harim, 2010, p. 302).
  Procedurally: Administrative control refers to the systematic process of monitoring and evaluating organizational performance in sports institutions, comparing it with predetermined objectives, and implementing corrective measures to achieve these objectives efficiently and effectively.
- **Organizational Efficiency**: Organizational efficiency denotes the extent to which an organization optimizes its human, material, financial, and informational resources. For institutions seeking growth and development, efficiency entails ensuring the continuous and effective allocation of these resources to sustain operations (Al-Munif, 1983, p. 286).
  Procedurally: Organizational efficiency is the capacity of a sports institution to achieve its objectives with minimal resource expenditure and maximal quality through the optimal allocation of human and material resources, the enhancement of internal processes, and the improvement of coordination and decision-making.
- **Sports Institutions**: Sports institutions are organizational entities responsible for managing and promoting sports activities. They encompass human and material resources and administrative processes, including planning, organizing, evaluating, and controlling (Kashway, 2006, p. 12).

Procedurally: Sports institutions are operational frameworks, such as facilities, sports complexes, or organizations, that deliver sports activities and are managed by structured administrative systems comprising groups of individuals.

3. Previous Studies

Dheeb and Jahemi (2024)

Title: The Role of Administrative Control in Enhancing Organizational Performance
This study explored administrative control as a critical mechanism for ensuring organizational continuity, success, and effective performance, emphasizing the pivotal role of human resources in achieving organizational objectives. Employing a theoretical analysis, the study examined the relationship between administrative control and organizational performance. Findings indicated that administrative control enhances performance and discipline by establishing clear standards, measuring actual performance, analyzing deviations, and implementing corrective actions. The integration of technology into control systems was found to improve efficiency by reducing costs, saving time, and enabling digital management. The study concluded that administrative control enhances human resource efficiency and service quality, with technology serving as a supportive tool to increase speed and effectiveness. Recommendations included educating employees about the importance of oversight, providing training for effective control, and adopting flexible supervisory approaches to avoid rigidity, which may lead to employee resistance or reduced motivation (Dheeb & Jahemi, 2024).

Boussak et al. (2021)

Title: The Role of Management Control Systems in Improving the Administrative Performance of Sports Institutions in Algeria: A Field Study of Sports Facilities in M'sila Governorate
This study highlighted the significance of management control systems in sports facilities as mechanisms for enhancing administrative practices and achieving institutional objectives. Using a descriptive-analytical approach, the researchers conducted a comprehensive survey of 19 sports complexes in M'sila Governorate, collecting data via questionnaires. Results revealed that inadequate sports facilities negatively impact the effectiveness of monitoring systems and, consequently, employees' administrative performance. However, both traditional and modern monitoring tools significantly improved administrative performance despite operational challenges. The study emphasized the role of comprehensive information systems in enhancing data collection, processing, and storage, thereby improving performance. Periodic audits and updates to these systems were deemed essential for sustained effectiveness. Additionally, dashboards were identified as critical tools for communication and decision-making, directing administrative processes toward efficiency and effectiveness in Algerian sports institutions (Boussak et al., 2021).

Charifi and Al-Aidani (2017)

Title: The Impact of Administrative Control on the Job Performance of Youth Home Staff
This study investigated the influence of administrative control on the job performance of youth home staff, focusing on control practices, performance evaluation, and their effects on performance outcomes. Employing a descriptive method, the researchers surveyed 30 educators from youth homes in Bouira, Laghouat, and Ain Sefra governorates, using questionnaires and interviews analyzed with percentages and the Chi-square (χ^2) test. Results confirmed that administrative control significantly enhances job performance, with the method of oversight directly influencing outcomes. The study recommended establishing specialized committees to design regulatory structures, clarify control regulations, and oversee their implementation. It also emphasized the need for motivational supervisory approaches and increased awareness among educators about the importance of administrative control for improving management effectiveness and quality (Charifi & Al-Aidani, 2017).

Zedam (2011)

Title: The Impact of Administrative Control on Employee Performance Efficiency in Sports Facilities
This study examined the effect of administrative control on employee performance efficiency in sports facilities, utilizing a descriptive survey method. Conducted at the Martyr Hamlawi Sports Complex in Constantine, the research included all staff and workers. Findings revealed a positive relationship between systematically designed administrative control mechanisms and performance efficiency, particularly when controls were purposefully applied to achieve organizational objectives. However, excessive or indiscriminate control was found to negatively impact employee efficiency. The study underscored the importance of balanced control mechanisms to optimize performance in sports facilities (Zedam, 2011).

Commenting on previous studies:

The present study intersects with several prior studies in its focus, methodology, and research tools, reinforcing the credibility of its theoretical framework and methodological choices. It aligns closely with research examining the

role of administrative control in enhancing organizational performance, particularly through the integration of technology to improve control system effectiveness and flexibility. This aligns with the current study's emphasis on adaptive and efficient control systems in sports institutions (Dheeb & Jahemi, 2024).

Contextually, the study shares similarities with research investigating the impact of management control systems on sports facilities, which highlights the role of both traditional and modern control tools in enhancing administrative performance (Boussak et al., 2021). It also connects functionally with studies exploring administrative control's influence on job performance in youth homes, particularly regarding how control methods affect employee behavior and motivation—an aspect addressed in the present study's evaluation of control effectiveness in improving organizational efficiency (Charifi & Al-Aidani, 2017). Additionally, the study converges with research demonstrating that systematically designed administrative control, guided by clear objectives, positively impacts employee efficiency in sports facilities (Zedam, 2011).

Methodologically, the current study adopts a descriptive-analytical approach, consistent with the methodologies of the reviewed studies, which validates its suitability for investigating administrative phenomena related to organizational efficiency. The use of questionnaires for data collection further aligns with established research practices in this field, enhancing the study's methodological rigor.

However, the present study distinguishes itself through its specific focus on the relationship between administrative control and organizational efficiency within the Algerian context, via a field study conducted at the Directorate of Youth and Sports in Biskra Province. This localized, applied focus provides spatial specificity and originality, contributing uniquely to the literature on sports management.

4. Field Procedures of the Study

4.1 Survey Study

The preliminary survey aimed to assess the suitability of the research setting and validate the research instrument in relation to the study's objectives. This step sought to explore key aspects of the phenomenon under investigation. The survey involved semi-structured interviews with a purposive sample of five key stakeholders from the Directorate of Youth and Sports in Biskra Province, comprising four department heads and one sports inspector. Additionally, a questionnaire was distributed to this sample to collect their insights, suggestions, and perspectives on critical aspects of administrative control and organizational efficiency. The data collected were used to refine the research instrument, ensuring its alignment with the research questions and the accuracy of the information gathered.

4.2 Temporal and Spatial Domain

Spatial Domain: The field study was conducted at the headquarters of the Directorate of Youth and Sports in Biskra Province, Algeria.

Temporal Domain: The study was carried out from March 2025 to May 2025. During this period, the theoretical framework was developed concurrently with the fieldwork.

4.3 Methodology

A research method is defined as a systematic set of rules, procedures, and techniques designed to facilitate the discovery of truth with minimal effort (Marwan, 2000, p. 60).

This study adopted a descriptive-analytical approach to achieve its objectives and test its hypotheses. This approach is well-suited for examining phenomena by systematically collecting and analyzing data on their characteristics and dimensions, identifying influencing factors, and deriving generalizable conclusions (Othman, 1998, p. 29). It involves the rigorous collection, classification, analysis, and interpretation of data to describe and quantify the phenomenon under study (Bouhouche & Al-Dhunaybat, 2007, p. 139).

4.4 Study Population and Sample

The study population included all employees of the Directorate of Youth and Sports in Biskra Province. A random sample of 35 employees was selected for participation, with questionnaires distributed to collect data. The study examined specific demographic and professional characteristics of the participants, including gender, age, and job level, to ensure a comprehensive analysis of the research variables.

Distribution of the study sample by gender:

Table 1: Distribution of the Study Sample by Gender

Gender	Frequency	Percentage
male	23	65%
female	12	35%
Total	35	100%

Source: Prepared by researchers based on SPSS V 25 outputs

- Distribution of the research sample by age:

Table 2: Shows the distribution of the study sample by age

Age	Frequency	Percentage
30–20 years	06	17%
31–40 years	14	40%
40years and above	15	43%
Total	35	100%

Source: Prepared by researchers based on SPSS V 25 outputs

- Distribution of the research sample by job level:

Table 3: Distribution of the study sample by job level

Job Level	Frequency	Percentage
employee	21	60%
Head of Department	10	29%
inspector	04	11%
Total	35	100%

Source: Prepared by researchers based on SPSS V 25 outputs

5- Scientific Properties of the Study Tool (Psychometric Characteristics)

5.1 Study Tool (Questionnaire):

The study utilized a questionnaire as the primary data collection instrument. A questionnaire is defined as a structured set of questions designed to gather information on a specific topic or phenomenon from respondents (Othman, 1998, p. 45). The questionnaire was developed and refined through a preliminary survey and expert review to ensure clarity, relevance, and alignment with the study's objectives. It comprises three main axes:

1. Effectiveness of Administrative Control in Enhancing Organizational Efficiency
2. Flexibility of Administrative Control and Its Adaptation to Organizational Variables
3. Role of Administrative Control in Enhancing Decision-Making and Governance

- Validity and Reliability of the Study Tool

The initial version of the questionnaire was submitted to three expert referees specializing in the principles and science of physical and sports activities. The purpose of this review was to ensure the clarity, relevance, and suitability of each item in relation to its corresponding axis. Based on the referees' feedback, necessary adjustments were made to refine the phrasing and enhance the alignment of the statements with the study objectives. This process ensured that the questionnaire was clear, comprehensible, and appropriate for data collection.

The items were distributed across a three-point Likert scale, as follows:

Range of arithmetic mean	01 to 1.66	From 1.66 to 2.32	2.32 to 3
Degree of approval	Low	Moderate	High
Responsiveness	01	02	03

- Reliability (Pearson correlation coefficient):

between the total scores of the axes Table 4: Pearson correlation coefficient values

Pearson		Axis 2	Theme 3
Axis 1	**Pearson correlation coefficient**	0,936**	0,959**
	Itself.	0,000	0,000
Axis 2	**Pearson correlation coefficient**		0,911**
	Itself.		0,000
** The level of statistical significance of the correlation coefficient at: 0.01			

Source: Prepared by researchers based on SPSS V 25 outputs

The table demonstrates the Pearson correlation coefficients between the axes:

- Between Axis 1 and Axis 2: 0.936
- Between Axis 1 and Axis 3: 0.959
- Between Axis 2 and Axis 3: 0.911

All correlation coefficients are statistically significant ($p < 0.01$), with a significance level of 0.000 for all calculated coefficients, which is below the 0.01 threshold. These results indicate strong and acceptable correlations between the axes, reflecting a high degree of internal consistency among the questionnaire items. The proximity of

the coefficients to 1 further confirms that the statements are closely related and reliably measure the intended constructs.

- Consistency of the questionnaire:

The reliability of the questionnaire was assessed using Cronbach's alpha to evaluate internal consistency. The overall reliability coefficient for the entire scale was 0.90, indicating excellent internal consistency and confirming the questionnaire's stability and suitability for the study. Reliability coefficients for each axis are presented in the following Table

Table 5: Cronbach's Alpha Coefficients for Questionnaire Axes

axles	Cronbach's Alpha	Number of Items
The first axis: effectiveness of administrative control in enhancing ficiencyorganizational ef	0.745	05
The second axis: flexibility of administrative control and its adaptation to environmental variables	0.789	05
-The Third Theme: Role of Administrative Control in Enhancing Decision Making and Governance	0.823	05

Source: Prepared by researchers based on SPSS V 25 outputs

6- Presentation and discussion of the results

Table 6: Responses of the study sample on the first theme: the effectiveness of administrative control in enhancing organizational efficiency

Item / Statement	Agree	neutral	Disagree	Mean	SD	Degree of approval	Rank
1. Administrative control procedures help reduce the waste of financial and material resources in the Directorate.	23	8	4	2,55	0.700	High	5
	%65.7	%22.9	11.4				
2. Administrative control contributes to improving coordination between administrative and sports departments to achieve institutional goals.	26	6	3	2.66	0.581	High	2
	%74.3	%17.1	8.6%				
3. Regular oversight enhances the job performance of employees through clear directives.	24	7	4	2,57	0.698	High	4
	%68.6	%20	11.4%				
4. Administrative control reports provide accurate data to correct errors and improve organizational processes.	26	7	2	2,69	0.582	High	1
	%74.3	%20	5.7%				
5. Administrative control supports the achievement of the strategic objectives of the Directorate with high efficiency and lower cost.	25	6	4	2,60	0.694	High	3
	%71.4	%17.1	11.4%				
Overall Axis				2.61	/	High	/

Source: Prepared by researchers based on SPSS V 25 outputs

The arithmetic means for the five items range from 2.55 to 2.69, all within the "High" degree of approval (2.33–3.00), indicating strong agreement among employees that administrative control enhances organizational efficiency at the Directorate of Youth and Sports in Biskra Province. The low standard deviations (0.581–0.700) reflect homogeneity in responses, reinforcing the reliability and consistency of the data.

Item 4: Accuracy of Reports (M = 2.69, SD = 0.582, Rank 1): The highest mean underscores the critical role of accurate administrative control reports in correcting errors and improving organizational processes. This aligns with Charifi and Al-Aidani (2017), who highlighted the importance of reliable data for reducing deviations and enhancing performance. Item 2: Coordination Between Departments (M = 2.66, SD = 0.581, Rank 2): The high mean reflects employees' recognition of administrative control as a mechanism for fostering coordination

between administrative and sports departments, supporting Boussak et al. (2021), who emphasized internal integration in sports institutions. Item 5: Strategic Objectives (M = 2.60, SD = 0.694, Rank 3): This mean indicates employees' awareness of administrative control's role in optimizing resource utilization to achieve strategic objectives efficiently, consistent with Dheeb and Jahemi (2024), who linked control systems to strategic efficiency. Item 3: Job Performance (M = 2.57, SD = 0.698, Rank 4): The mean confirms that regular oversight enhances employee performance through clear directives, aligning with Zedam (2011), who noted the positive impact of systematic oversight on sports facility workers. Item 1: Resource Waste (M = 2.55, SD = 0.700, Rank 5): The lowest mean, though still within the high approval range, suggests challenges in implementing financial and material resource control, potentially due to limited technological infrastructure or staff training, as noted by Boussak et al. (2021).

The overall axis mean of 2.61 supports the first subsidiary hypothesis: "Effective administrative control improves organizational efficiency in sports institutions by enhancing coordination and minimizing deviations." The results reflect a strong positive evaluation of administrative control practices, yet they highlight the need for enhanced electronic control systems and specialized training to address challenges in resource management, ensuring more effective achievement of strategic objectives.

These findings are consistent with prior research. Charifi and Al-Aidani (2017) emphasized that administrative oversight improves organizational performance through accurate reporting and deviation reduction, while Dheeb and Jahemi (2024) underscored the role of technological integration in enhancing efficiency. Boussak et al. (2021) noted that limited resources in sports institutions can constrain control effectiveness, explaining the lower mean for Item 1. Zedam (2011) highlighted oversight's positive impact on employee performance but cautioned against overly rigid control mechanisms that may reduce motivation, suggesting the adoption of incentive-based approaches.

Table 7: Responses of the study sample on the second axis: the flexibility of administrative control and its adaptation to environmental variables

Item / Statement	Agree	neutral	Disagree	Mean	SD	Degree of approval	Rank
6. Administrative control relies on flexible performance indicators that adapt to changes in the work environment.	26 %74.3	7 %20	2 5.7%	2.68	0.581	High	2
7. Administrative control tools are updated periodically to keep pace with legislative and technological changes.	26 %74.3	7 %20	2 5.7%	2.70	0.583	High	1
8. Administrative control uses modern electronic systems to facilitate adaptation to interim objectives.	25 %71.4	6 %17.1	4 11.4%	2.62	0.694	High	3
9. Administrative control takes into account the different particularities of the departments and interests in the Directorate.	24 %68.6	7 %20	4 11.4%	2.56	0.698	High	5
10. Flexible management control allows for quick response to challenges without bureaucratic complexities.	25 %71.4	6 %17.1	4 11.4%	2.60	0.693	High	4
Overall Axis				2.63	/	High	/

Source: Prepared by researchers based on SPSS V 25 outputs

The arithmetic means for the five items range from 2.56 to 2.70, all within the "High" degree of approval (2.33–3.00), indicating strong agreement among employees that administrative control is flexible and adaptable to internal and external environmental variables at the Directorate of Youth and Sports in Biskra Province. The low standard deviations (0.581–0.698) reflect homogeneity in responses, reinforcing the reliability and consistency of the data.

Item 7: Updating Control Tools (M = 2.70, SD = 0.583, Rank 1): The highest mean underscores employees' strong awareness of the importance of periodically updating administrative control tools to align with

legislative and technological changes. This aligns with Dheeb and Jahemi (2024), who emphasized that technological integration enhances oversight flexibility and reduces costs. Item 6: Flexible Performance Indicators (M = 2.68, SD = 0.581, Rank 2): The high mean reflects recognition of dynamic mechanisms that allow control systems to adapt to changing work environment requirements, supporting Charifi and Al-Aidani (2017), who noted the role of accurate and up-to-date systems in enhancing flexibility. Item 8: Modern Electronic Systems (M = 2.62, SD = 0.694, Rank 3): This mean highlights the role of technology in facilitating adaptation to interim objectives, consistent with Dheeb and Jahemi (2024), who underscored technology's contribution to oversight flexibility. Item 10: Rapid Response to Challenges (M = 2.60, SD = 0.693, Rank 4): The mean indicates a positive perception of flexible control in addressing challenges without bureaucratic complexities, though some administrative obstacles persist, as noted by Zedam (2011), who recommended incentive-based approaches to avoid employee frustration. Item 9: Departmental Particularities (M = 2.56, SD = 0.698, Rank 5): The lowest mean, though still within the high approval range, suggests that administrative control could better account for the specific needs of different departments, potentially due to resource constraints, as highlighted by Boussak et al. (2021).

The overall axis mean of 2.63 supports the second subsidiary hypothesis: "The effectiveness of administrative control depends on its flexibility and ability to adapt to environmental changes." The results reflect strong institutional awareness of the importance of flexible administrative control, yet they highlight the need to strengthen electronic systems, reduce bureaucratic obstacles, and enhance adaptation to departmental particularities to improve alignment with regulatory and legislative changes.

These findings are consistent with prior research. Dheeb and Jahemi (2024) confirmed that integrating technology into oversight enhances flexibility and cost-efficiency, supporting the high ratings for Items 7 and 8. Charifi and Al-Aidani (2017) noted that accurate information systems bolster oversight flexibility, though challenges like resource limitations, as identified by Boussak et al. (2021), may explain the lower mean for Item 9. Zedam (2011) emphasized that systematic oversight boosts efficiency but cautioned against random application, aligning with the need to improve adaptation to departmental specificities and reduce bureaucracy.

Table 8: Responses of the study sample on the third theme: The role of administrative control in enhancing decision-making and governance

Item / Statement	Agree	neutral	Disagree	Mean	SD	Degree of approval	Rank
11. Administrative control provides accurate and up-to-date data that supports rational management decision-making.	26	7	2	2.68	0.581	High	2
	%74.3	%20	5.7%				
12. Administrative control contributes to improving the quality of decisions related to the management of sports resources and activities.	27	5	3	2.71	0.631	High	1
	%77.4	%14.3	8.6%				
13. Administrative control enhances transparency in the management of human and financial resources within the Directorate.	23	8	4	2.54	0.700	High	5
	%65.7	%22.9	11.4				
14. The results of management control are used to develop management policies that meet the needs of stakeholders.	25	6	4	2.60	0.694	High	3
	%71.4	%17.1	11.4%				
15. Administrative control supports the application of good governance principles to ensure the satisfaction of athletes and the community.	24	7	4	2.57	0.698	High	4
	%68.6	%20	11.4%				
Overall Axis				2.62	/	High	/

Source: Prepared by researchers based on SPSS V 25 outputs

The arithmetic means for the five items range from 2.54 to 2.71, all within the "High" degree of approval (2.33–3.00), indicating strong agreement among employees that administrative control enhances decision-making

and governance at the Directorate of Youth and Sports in Biskra Province. The low standard deviations (0.581–0.700) reflect homogeneity in responses, reinforcing the reliability and consistency of the data.

Item 12: Decision Quality (M = 2.71, SD = 0.631, Rank 1): The highest mean underscores employees' strong awareness of administrative control's role in improving the quality of decisions related to sports resource and activity management. This aligns with Dheeb and Jahemi (2024), who emphasized that oversight systems provide accurate data to rationalize strategic and daily decisions. Item 11: Accurate Data for Decision-Making (M = 2.68, SD = 0.581, Rank 2): The high mean highlights the importance of accurate and up-to-date control data in reducing randomness in administrative management, supporting Charifi and Al-Aidani (2017), who noted the role of micro-information systems in decision-making. Item 14: Developing Management Policies (M = 2.60, SD = 0.694, Rank 3): This mean reflects the strategic use of oversight results to develop policies meeting stakeholder needs, consistent with Boussak et al. (2021), who linked control outputs to improved public policies. Item 15: Good Governance Principles (M = 2.57, SD = 0.698, Rank 4): The mean indicates a positive perception of administrative control's role in supporting governance principles to ensure athlete and community satisfaction, though further institutionalization is needed, as suggested by Zedam (2011). Item 13: Transparency in Resource Management (M = 2.54, SD = 0.700, Rank 5): The lowest mean, though still within the high approval range, suggests challenges in implementing transparency, particularly in financial and human resource management, potentially due to limited resources, as noted by Boussak et al. (2021).

The overall axis mean of 2.62 supports the third subsidiary hypothesis: "Regulatory systems based on guidance and follow-up contribute to improving the quality of decision-making within sports institutions." The results reflect a strong positive evaluation of administrative control's role in enhancing decision-making and governance, yet they highlight the need to develop electronic information systems, improve transparency in financial and human resource management, and intensify training to support the institutionalization of good governance.

These findings are consistent with prior research. Dheeb and Jahemi (2024) confirmed that oversight enhances decision-making and governance through technological integration, supporting the high ratings for Items 11 and 12. Charifi and Al-Aidani (2017) noted that micro-information systems improve decision-making but highlighted resource constraints, aligning with the lower mean for Item 13. Boussak et al. (2021) emphasized challenges in resource-limited settings, explaining transparency issues. Zedam (2011) highlighted the positive impact of systematic oversight on efficiency but cautioned against unregulated implementation, supporting the need for improved transparency mechanisms and incentive-based approaches.

7- Conclusion:

The analysis of questionnaire data from a sample of employees at the Directorate of Youth and Sports in Biskra Province elucidates the pivotal role of administrative control in enhancing organizational efficiency across three dimensions: effectiveness, flexibility, and decision-making/governance. The findings across these dimensions substantiate the study's general hypothesis and highlight both strengths and areas for improvement.

The results of the first axis demonstrated the effectiveness of administrative control in fostering coordination between administrative and sports departments, providing accurate reports that facilitate error correction and operational improvements, and supporting the efficient achievement of strategic objectives. However, challenges in reducing financial and material resource waste underscore the need to strengthen financial control mechanisms and adopt advanced resource management tools.

The findings of the second axis affirmed the flexibility of administrative control, evidenced by the periodic updating of control tools to align with legislative and technological advancements, the adoption of dynamic performance indicators responsive to work environment demands, and the use of electronic systems to facilitate adaptation to interim objectives. Nonetheless, the results highlighted the necessity of greater consideration for the unique needs of various departments and the reduction of bureaucratic complexities that may impede rapid responses to emerging challenges.

The third axis underscored the role of administrative control in enhancing the quality of decisions related to sports resource and activity management, providing reliable data to support rational decision-making, and leveraging audit outcomes to formulate administrative policies that address stakeholder needs. Furthermore, control mechanisms significantly contributed to reinforcing good governance principles, promoting the satisfaction of athletes and the broader community. However, a relative shortfall in transparency, particularly in managing human and financial resources, indicates challenges that necessitate stronger institutionalization of accountability mechanisms.

Collectively, these findings confirm the validity of the general hypothesis: "Administrative control contributes to the development of organizational efficiency within sports institutions." Administrative control

enhances internal coordination, improves job performance, supports rational decision-making, and promotes effective governance. Nevertheless, the results emphasize the urgent need to address challenges related to reducing resource waste, enhancing transparency, and improving adaptation to departmental specificities to ensure the long-term sustainability of organizational efficiency in sports institutions.

Suggestions:

Based on the findings from the questionnaire data analysis conducted with employees at the Directorate of Youth and Sports in Biskra Province, the following proposals are recommended to strengthen the role of administrative control in enhancing organizational efficiency within sports institutions:

- Development of Electronic Control Systems: Implement advanced digital solutions and specialized software to monitor financial and human resources. These systems aim to enhance report accuracy, minimize resource waste, and ensure timely access to reliable data, thereby supporting operational efficiency and decision-making.
- Capacity-Building and Training: Organize ongoing training programs and periodic workshops for employees to enhance their proficiency in using electronic control tools. These initiatives should also deepen employees' understanding of governance principles to foster transparency, efficiency, and accountability.
- Design of Flexible Control Mechanisms: Develop adaptable control frameworks that account for the unique needs of various departments and activities. Such frameworks ensure alignment with diverse operational requirements and facilitate responsiveness to legislative, technological, and environmental changes.
- Enhancing Transparency and Accountability: Establish electronic dashboards for the regular publication of audit and performance reports. This initiative would bolster stakeholder trust, reinforce good governance practices, and institutionalize robust accountability mechanisms.
- Stakeholder Engagement: Conduct periodic surveys and consultations with administrators, athletes, coaches, and local community members to assess their satisfaction with management policies and governance practices. This approach promotes inclusive, stakeholder-responsive, and sustainable decision-making.
- Periodic Review of Management Policies: Implement systematic evaluations and updates of management policies within sports institutions to ensure alignment with the objectives of administrative control, organizational efficiency, and continuous improvement.

Findings

- Positive Influence on Decision-Making: Oversight practices contributed to the accuracy and timeliness of decisions, reducing administrative errors and delays.
- Improved Coordination: The mechanisms fostered integration and cooperation across departments, facilitating collective achievement of institutional objectives.
- Strengthened Governance: Oversight enhanced accountability and compliance, supporting sustainable institutional development.
- Adaptability: The presence of oversight enabled the institution to respond more effectively to environmental changes, both internal and external.
- Persistent Challenges: Despite these strengths, oversight mechanisms were less effective in addressing waste reduction and in promoting complete transparency across reporting systems.

Funding

This study was conducted with the institutional support of the Laboratory of Modern Sciences in Physical and Sport Activities, Institute of Science and Technology of Physical and Sport Activities, University of Bouira, Algeria. No external funding was received.

Ethical Considerations

The research was carried out in full compliance with academic ethical standards. Participation was voluntary, and all respondents provided informed consent prior to completing the questionnaire. Confidentiality and anonymity of participants were strictly preserved, and data were used solely for scientific purposes.

Acknowledgment
The authors express their gratitude to the Directorate of Youth and Sports of Biskra for facilitating the research process, as well as to the employees who willingly participated in the study. Special thanks are also extended to the University of Bouira for academic and logistical support.

Conflict of Interest
The authors declare no conflict of interest regarding the publication of this study.

8. Bibliography:

1. Abdelmajeed Ibrahim Marwan. (2000). *Foundations of Scientific Research for University Theses (1st Edition).* Amman: Al-Riwaq Publishing.
2. Ammar Bouhouche, and Mahmoud Al-Dhunaybat. (2007). *Scientific Research Methods and Research Preparation Methods (4th Edition).* Algeria: Diwan of University Medicines.
3. Ammar Zedam. (2011). The Effect of Administrative Control on the Performance Efficiency of Employees in Sports Facilities. *Master's Thesis in Theory and Methodology of Physical and Sport Education, Specialization in Sport Management and Management*, Dali Brahim University - Algeria - Institute of Physical and Sport Education - Sidi Abdallah.
4. Barry Kashway. (2006). *Human Resources Management (2nd Edition).* Dar Al-Farouk for Publishing and Distribution, Cairo, Egypt.
5. Fatiha Boussak, Habib Sadrati, and Asmaa Boussak. (2021). The Role of the Management Control System for Sports Facilities in Improving the Administrative Performance of Sports Institutions in Algeria: A Field Study of Neighboring Sports Vehicles in the Wilayat of Messila". *Journal of Challenge, 13*(1), 119-132. https://asjp.cerist.dz/en/article/1428
6. Hama Dheeb, and Abdulaziz Jahemi. (2024). The Role of Administrative Control in Developing the Organizational Performance of Organizations. *Qabas Journal for Humanities and Social Studies, 8*(1), 75-108. https://asjp.cerist.dz/en/article/250729
7. Hassan Osman Othman. (1998). *Methodology in Writing Research and University Theses (D.T.).* Batna, Algeria: Chehab Publications.
8. Hussein Harim. (2010). *Principles of Modern Management: Theories, Administrative Processes, and Organizational Functions (2nd Edition).* Dar Al-Hamid for Publishing and Distribution, Jordan.
9. Ibrahim Abdullah Al-Munif. (1983). *Management concepts, foundations and tasks.* Dar al-Uloom, Saudi Arabia.
10. Messaoud CharifiAidani. (2017). The Impact of Administrative Control on the Job -and Hakim Al , *nd Technology of Sport Physical Journal of Science a* .Performance of Youth Role Frameworks .201-191 ,(14)*Activity, 6*https://asjp.cerist.dz/en/article/35615

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Analytical Possibilities of Stakeholder Theory in Higher Education: Strategic Perspectives for Ensuring Quality of Educational Programs

Yevdokymova, Natalia
Professor
Member of the Presidium, Key Expert, Public Organization Club of Economists
Kyiv, Ukraine
E-mail: evdakimova_n@gmail.com

Kotenok, Daria
Associate Professor
Kyiv National Economic University named after Vadym Hetman
Kyiv, Ukraine
E-mail: kotenok.dariia@kneu.edu.ua

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords higher education, stakeholder analysis, quality of education, educational program, strategic management, governance

Abstract
This article substantiates the necessity of implementing stakeholder analysis into the strategic management of higher education institutions (HEIs) to ensure and continuously improve educational quality. The study highlights the recognition of stakeholder concepts in education policy through the methodological frameworks developed by the National Agency for Higher Education Quality Assurance of Ukraine. It identifies fundamental differences between the strategic concepts applied to firms and those adapted to higher education, while assessing the substantive similarities between "quality of education" and "quality of educational programs." Document analysis and comparative methods were employed to evaluate the rational limits of stakeholder theory application in HEIs. Findings demonstrate that the integration of stakeholder perspectives strengthens accountability, promotes transparency, and enhances the legitimacy of higher education institutions in society. The research also identifies gaps in adapting classical stakeholder theory—originally developed for corporations—to the context of higher education, pointing to the need for flexible models that consider the multiplicity of stakeholders (students, faculty, employers, regulators, and local communities). The article concludes that stakeholder analysis has significant potential for advancing higher education quality strategies, provided it is adapted to educational contexts rather than directly transferred from corporate frameworks.

Citation. Yevdokymova, N., Kotenok, D. (2025). Analytical Possibilities of Stakeholder Theory in Higher Education: Strategic Perspectives for Ensuring Quality of Educational Programs. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 996–1001. https://doi.org/10.56352/sei/8.11.80

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 11.05.2025 | Accepted: 25.08.2025 | Published: 20.09.2025 (available online)

1. Introduction

An important direction in the development of organizational management theory, based on the value approach, has been the stakeholder theory of the firm. This concept has been positively received by scholars and practitioners across many spheres of public life and has been adopted by leading corporations, regulatory bodies, and non-profit organizations. A vast number of academic studies and practice-oriented publications have been devoted to its development. Persistent interest in this field of knowledge indicates, on the one hand, its theoretical and practical significance, and on the other, the certain incompleteness of the approach, which, despite its conceptual appeal and simplicity, requires deeper elaboration in practical application.

2. Aim of the Study

The objective of this study is to examine the analytical possibilities of stakeholder analysis in the field of higher education.

3. Materials and Methods

The theoretical foundation of the study is stakeholder theory and its operational tool—stakeholder analysis. To evaluate the rational boundaries of applying stakeholder analysis to higher education institutions (HEIs), the methods of document analysis and comparison were employed. Generalizations were derived from the authors' reasoning and interpretation.

4. Results and Discussion

4.1. The Emergence of Stakeholder Theory

The origins of stakeholder theory are associated with the pioneering monograph of R. E. Freeman *Strategic Management: A Stakeholder Approach* (1984) [1]. According to Freeman's definition, company stakeholders are "any individuals, groups, or organizations that can significantly affect, or are affected by, the firm's decisions" [1, p. 25]. His generalized list of stakeholders included owners, employees, consumers, competitors, suppliers, the state, and local community organizations. Consequently, corporate management, in proving its social responsibility and economic rationality, is expected to act in ways that satisfy—or at least do not infringe upon—the interests of stakeholders. Today, the stakeholder approach has become one of the dominant streams of strategic management, and its ideas and tools are widely employed in organizational governance. At the same time, within this branch of management, there remain "bottlenecks" that limit its effective application in other spheres of activity.

4.2. Strategic Context and Stakeholder Models in HEIs

A key problem in building applied models based on stakeholder analysis, in our view, lies in defining the strategic context of organizational activity. The correctness of the initial stages of stakeholder analysis—identifying stakeholders and formally describing their behavior—depends on this definition. When an organization makes a strategic decision, the justification of its appropriateness must include an assessment of the expectations of all interested parties. Strategic analysis methods grounded in stakeholder theory may thus prove useful in substantiating organizational goals, considering both their complexity and multidimensionality as well as the heterogeneity of stakeholders in terms of interest and influence. At the same time, stakeholder theory requires managers to regard stakeholders as an integral yet contradictory whole, where the balance of their interests defines the developmental trajectory of the organization. However, the theory also has certain limitations as an autonomous tool of organizational management.

4.3. Stakeholder Models in Educational Management

The application of stakeholder theory and its instruments in educational management significantly expands analytical capabilities, especially in light of the modern concept of ensuring and enhancing education quality. As O. V. Yeremenko has noted in the context of developing the National Agency for Higher Education Quality Assurance

(NAQA): "In documents concerning higher education quality, the concept of 'stakeholders'—the so-called interested parties—has already become common and frequently used" [2, p. 177].

In recent years, NAQA has focused on developing the normative base related to program accreditation. In 2019, NAQA developed the *Criteria for Assessing the Quality of Educational Programs*, later reflected in methodological guidelines for experts. These criteria are less formalized rules for program content and process than general provisions aimed at evaluating implementation practices. Their universality and flexibility are ensured by adherence to three principles: (i) respect for HEI autonomy, (ii) consideration of contextual conditions, and (iii) direct involvement of stakeholders [3]. Importantly, the guidelines state: *"Criteria can only be meaningfully applied in the context of stakeholder positions. It is stakeholder participation that enables an HEI to identify the environment in which it functions and to determine the requirements that define the quality of a specific educational program"* [3, sec. I].

As a result, in preparation for accreditation, many HEIs formalized relations between internal and external stakeholders by adopting "Regulations on Program Stakeholders" [4–6]. These documents defined stakeholders in education as direct participants in producing and consuming higher education outcomes (faculty, applicants, students, graduates, employers, and state institutions), as well as business structures, other HEIs, banks and financial institutions, sponsors, research funding organizations, media, civil associations, investors, recruitment agencies, publishers, and academic societies [4, p. 5].

4.4. The Strategic Context of Educational Quality

When defining the strategic context of HEIs through the prism of educational quality, i.e., continuous improvement of all processes, universities set wide-ranging development goals that account for diverse stakeholder needs. The list of relevant stakeholders is extensive: students and households, faculty and management, the state and local communities, employers, and external partners. Hence, universities realize their strategic goals primarily through the implementation of educational programs. In this sense, institutional stakeholders are transformed into program stakeholders.

This interpretation is supported by European recommendations on higher education reforms in Ukraine, which emphasize that educational programs should be developed in alignment with HEI strategy [7]. Yet, while valid, this recommendation requires further clarification within the framework of strategic management. Unlike corporate business units, educational programs are semi-virtual environments that are not always fully institutionalized. Faculty from different departments contribute to program delivery, but current labor law does not formalize their participation in program teams. Similarly, program guarantors perform managerial functions on a voluntary basis, often limited to program design and methodological oversight, while program implementation follows the general functional structure of the HEI.

Therefore, an educational program cannot, in our opinion, be regarded as a separate strategic unit of an HEI. Research analogies between the educational and business sectors, as well as direct application of strategic management tools, require more nuanced academic substantiation.

4.5. Beyond Program-Level Stakeholder Management

It is evident that stakeholders in higher education should be analyzed in the broader strategic context of ensuring and improving education quality. This corresponds with NAQA's methodological guidelines and aligns with the argument of S. M. Kvit, head of NAQA, who noted that accreditation should focus "not on the outcomes of the educational process, but on the process itself—that is, the capacity of HEIs to organize a high-quality educational process based on the principles of institutional autonomy" [8, p. 172].

Thus, the scope of stakeholder analysis and stakeholder management in higher education extends beyond individual educational programs. Programs, though strategic priorities, are inseparable from the institutional environment and from one another. This indicates a conceptual gap between "quality of education" and "quality of an educational program," as well as attempts to substitute one for the other.

Actuality of the Research

The actuality of this study arises from the ongoing transformation of higher education systems in Ukraine and globally, where the traditional models of governance, evaluation, and quality assurance are increasingly being replaced by approaches based on accountability, transparency, and stakeholder participation. The shift from a provider-centered to a stakeholder-centered paradigm reflects profound changes in the mission of universities, which are no longer regarded solely as knowledge producers, but also as service providers, societal partners, and key actors in national and regional development strategies.

In the global educational landscape, international organizations such as UNESCO, OECD, and the European Higher Education Area have emphasized the need for inclusive, responsive, and socially oriented education systems that actively engage diverse stakeholders. This requirement is particularly urgent in transitional economies, where higher education institutions (HEIs) face multiple challenges: the need to align academic programs with labor market demands, to meet international accreditation and ranking standards, and to justify their societal value in conditions of limited resources and intensified competition.

In Ukraine, the establishment of the National Agency for Higher Education Quality Assurance has formalized the role of stakeholder participation in accreditation, governance, and strategic management. However, while the term "stakeholder" is increasingly used in methodological and policy documents, its theoretical and applied integration into higher education practices remains incomplete. Stakeholder theory, originally developed for corporations, cannot be directly transplanted into the educational sphere without adaptation, since HEIs operate in a multidimensional environment with broader social and cultural missions. This creates both opportunities and risks: opportunities for expanding accountability and improving quality, and risks of misinterpretation, superficial formalization, or reductionism in applying business-based models to education.

The actuality of the present study also stems from the need to bridge the gap between theory and practice. While stakeholder analysis has become a standard tool in corporate strategic management, its systematic application in higher education remains fragmented and underexplored. For many HEIs, the stakeholder approach is still perceived as a formal requirement of accreditation rather than as an integrated strategic resource. A comprehensive scientific substantiation of the analytical possibilities of stakeholder theory in the higher education context is therefore essential for creating robust, evidence-based, and context-sensitive governance models.

In this sense, the research not only contributes to academic discourse but also offers practical insights for policymakers, administrators, and educators. By adapting the instruments of stakeholder theory to higher education, it becomes possible to enhance institutional autonomy, strengthen trust between HEIs and society, and ensure sustainable quality development in line with European and global standards.

Findings

1. **Adaptability of Stakeholder Theory:**
   While originally conceptualized in the corporate sector, stakeholder theory can be successfully adapted to higher education, provided that modifications are made to address its broader societal mission.

2. **Quality Assurance Perspective:**
   The concepts of "quality of education" and "quality of educational programs" are strongly interrelated. Stakeholder analysis offers practical tools for aligning institutional strategies with accreditation and quality assurance requirements.

3. **Stakeholder Diversity in HEIs:**
   Unlike firms, HEIs have a wider and more complex stakeholder base, including students, academic staff, government agencies, employers, professional associations, and society at large. Their diverse and sometimes conflicting expectations require balanced and transparent governance approaches.

4. **Policy Implications:**
   Methodological documents of the National Agency for Higher Education Quality Assurance acknowledge the

importance of stakeholder engagement. Their effective use can enhance legitimacy, accountability, and innovation in higher education policy and practice.

5. **Strategic Outcomes:**
   Universities that integrate stakeholder perspectives into their quality strategies demonstrate improved responsiveness to labor market demands, enhanced student satisfaction, and stronger institutional reputation.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The study was conducted within the framework of academic responsibilities of the authors and supported by their respective institutions.

Ethical Considerations

The study involved no human or animal participants, experiments, or personal data collection. All analyses were based on publicly available documents, policy frameworks, and theoretical literature. Ethical standards in academic writing and referencing were rigorously followed.

Acknowledgment

The authors express gratitude to the Kyiv National Economic University named after Vadym Hetman and the Public Organization *Club of Economists* for providing institutional support and access to relevant academic resources. Special appreciation is extended to colleagues and reviewers who offered constructive comments on earlier drafts of this work.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

References

1. Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston, MA: Pitman.
2. Yeremenko, O. V. (2020). The National Agency for Higher Education Quality Assurance: Chronicles of the establishment period. In S. Kvit (Ed.), *Annual report of the National Agency for Higher Education Quality Assurance for 2019* (pp. 175–191). Kyiv: NAQA. Retrieved from https://naqa.gov.ua/wp-content/uploads/2020/02/Звіт-2020.pdf
3. National Agency for Higher Education Quality Assurance. (2019). *Methodological recommendations for experts on the application of criteria for assessing the quality of educational programs* (Protocol No. 9, August 29, 2019). Kyiv: NAQA. Retrieved from https://naqa.gov.ua/wp-content/uploads/2019/09/Методичні-рекомендації_для-експертів.pdf
4. Kharkiv National Agrarian University. (2019). *Regulations on stakeholders of educational programs*. Kharkiv: KhNAU. Retrieved from https://knau.kharkov.ua/uploads/pubinfo/2020/stakeholder.pdf
5. Ternopil National Pedagogical University. (2017). *Regulations on stakeholders of educational programs*. Ternopil: TNPU. Retrieved from http://tnpu.edu.ua/about/public_inform/upload/2017/Polozhennia_pro_steikkholderiv_osvitnikh_prohram.pdf
6. Mykolaiv National Agrarian University. (2020). *Regulations on cooperation with employers (external stakeholders)*. Mykolaiv: MNAU. Retrieved from https://www.mnau.edu.ua/files/dostup/educational-process/278.pdf
7. Dvorzhakova, V., Smrčka, J., & Vidlakova, M. (2019). *Recommendations for improving the quality of higher education in Ukraine*. Kyiv: NAQA. Retrieved from https://naqa.gov.ua/wp-content/uploads/2019/07/Додаток-2.-Рекомендації-для-покращення-якості-вищої-освіти-в-Україні.pdf

8. Kvit, S. M. (2020). The new accreditation system: What awaits Ukrainian universities? In S. Kvit (Ed.), *Annual report of the National Agency for Higher Education Quality Assurance for 2019* (pp. 170–174). Kyiv: NAQA. Retrieved from https://naqa.gov.ua/wp-content/uploads/2020/02/Звіт-2020.pdf
9. Bryson, J. M. (2018). *Strategic planning for public and nonprofit organizations: A guide to strengthening and sustaining organizational achievement* (5th ed.). Hoboken, NJ: Wiley.
10. Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review, 20*(1), 65–91. https://doi.org/10.5465/amr.1995.9503271992
11. Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B., & de Colle, S. (2010). *Stakeholder theory: The state of the art*. Cambridge: Cambridge University Press.
12. Jongbloed, B., Enders, J., & Salerno, C. (2008). Higher education and its communities: Interconnections, interdependencies and a research agenda. *Higher Education, 56*(3), 303–324. https://doi.org/10.1007/s10734-008-9128-2
13. Marginson, S. (2016). The worldwide trend to high participation higher education: Dynamics of social stratification in inclusive systems. *Higher Education, 72*(4), 413–434. https://doi.org/10.1007/s10734-016-0016-x
14. Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review, 22*(4), 853–886. https://doi.org/10.5465/amr.1997.9711022105
15. OECD. (2019). *Benchmarking higher education system performance*. Paris: OECD Publishing. https://doi.org/10.1787/be5514d7-en
16. Rowley, T. J. (1997). Moving beyond dyadic ties: A network theory of stakeholder influences. *Academy of Management Review, 22*(4), 887–910. https://doi.org/10.5465/amr.1997.9711022107
17. Scott, P. (2015). Mass higher education and the managerial revolution. In J. Huisman, H. de Boer, D. D. Dill, & M. Soutar (Eds.), *The Palgrave international handbook of higher education policy and governance* (pp. 37–58). London: Palgrave Macmillan.
18. Shattock, M. (2014). *Managing successful universities* (2nd ed.). Maidenhead: Open University Press.
19. Stensaker, B., & Harvey, L. (2013). Quality in higher education. In J. Huisman (Ed.), *International handbook on higher education policy and governance* (pp. 175–196). Dordrecht: Springer.
20. UNESCO. (2021). *Futures of education: Learning to become*. Paris: UNESCO. Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000379381
21. Vidovich, L. (2002). Quality assurance in Australian higher education: Globalisation and 'steering at a distance'. *Higher Education, 43*(3), 391–408. https://doi.org/10.1023/A:1014668921621
22. Zaharia, R. M., & Zaharia, R. (2014). Stakeholder approach in higher education: Different perspectives and perspectives of implementation. *Management & Marketing, 9*(2), 171–182.
23. Zgaga, P. (2012). Reconsidering higher education governance. In A. Curaj, P. Scott, L. Vlasceanu, & L. Wilson (Eds.), *European higher education at the crossroads: Between the Bologna Process and national reforms* (pp. 439–458). Dordrecht: Springer.

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Role of Scientific Research in Developing the Management of Training Programs for Human Resources in the Municipality

Sebiane Mohammed
Doctor
Abu Bekr Belkaid University of Tlemcen
Algeria
E-mail: sebianemohamed90admpub14@gmail.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords scientific research, management of training programs, human resources, municipality.

Abstract
This research paper aims to study and analyze the role that scientific research can play in developing the management of training programs for human resources in the municipality, in light of contemporary developments that include the administrative, economic, social, and cultural fields, and their impact on the process of local development. Among the most important results reached is that the activation of scientific research requires adopting several mechanisms, the most important of which is activating the idea of community participation with the aim of providing real opportunities for local actors active in the field of scientific research to initiate their scientific efforts, establishing digital platforms to document and strengthen continuous communication and interaction between those managing municipal affairs and the scientific elite, in order to address development issues, including the issue of developing the management of training programs. Added to the above is also the necessity of adopting an artificial intelligence system under the supervision of actors active in the field of scientific research to contribute to rationalizing the management of training programs.

Citation. Sebiane M. (2025). The Role of Scientific Research in Developing the Management of Training Programs for Human Resources in the Municipality. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1002–1012. https://doi.org/10.56334/sei/8.11.81

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 28.03.2025 | Accepted: 12.08.2025 | Published: 05.10.2025 (available online)

Introduction:

The human resources that perform their functional activity at the level of the municipality constitute a main component in the management of local affairs, considering the nature of the tasks they have become responsible for performing, such as planning, coordinating, and implementing policies and decisions. Among the most important forms of these resources are the locally elected members and public employees. In order for these categories to perform their tasks to the fullest, training programs must be organized periodically with the aim of developing their capacities in the fields they occupy.

In light of the continuous development witnessed in administrative and technical fields, in addition to the growing requirements of the local community and their increasing flow at higher rates, the matter requires adopting more effective approaches that make it possible to develop the content of training programs, and thereby contribute to developing their outcomes at the individual and institutional level. Scientific research is one of the most important approaches that can contribute to addressing this issue, given the standards it is characterized by, which include accuracy and objectivity. From this standpoint, we raise the following problem:

Problem:

What are the most important mechanisms that must be adopted to activate the role of scientific research in developing the management of training programs for human resources in the municipality?
Sub-questions:

1. What role does the idea of community participation play in activating the role of scientific research?
2. How does the digitization system contribute to documenting

communication between those managing municipal affairs and the actors active in the field of scientific research? And what are its implications for developing the management of training programs?

3. What is the importance of activating the artificial intelligence system in the management of training programs?

Study Hypotheses:

1. The higher the level of activation of community participation, the higher the level of activation of scientific research in the management of training programs.
2. The higher the level of reliance on digital platforms, the more it enhances the level of cooperation between those managing municipal affairs and local actors active in the field of scientific research.
3. The higher the level of activation of artificial intelligence, the greater the rationalization of training programs.

Study Methodology:

In order to address the raised problem and verify the validity of the hypotheses we formulated, we attempted to adopt the descriptive and analytical method, by employing the descriptive approach, which is one of the most important methods that helps to describe and diagnose the study variables and determine the relationship between them. We also tried to employ scientific research as an approach to developing the management of training programs.

Study Objectives:

Through this study, we seek to achieve a set of objectives, the most important of which are:

1. To determine the nature of the relationship between scientific research and the process of developing the management of training programs for human resources in the municipality.
2. To determine the most important mechanisms that can be adopted to activate the role of scientific research in preparing and managing training programs for human resources in the municipality.
3. To evaluate the extent of the contribution of scientific research to developing the management of training programs for human resources in the municipality.
4. To take the initiative in presenting a scientific vision that includes the most important mechanisms that would contribute to developing the process of training human resources in the municipality in light of contemporary development challenges.

Division of the Study:

In order to determine the nature of the relationship between the study variables, and thereby address the research problem, we divided this study according to the following plan:

- First axis: The theoretical rooting of the study concepts.
- Second axis: Mechanisms for documenting communication between scientific research and the process of managing training programs.

First Axis: The Theoretical Rooting of the Study Concepts

First: Scientific Research

Scientific research constitutes one of the most important responsibilities borne by the elites and competencies active at the level of universities, institutes, and centers of a scientific and technological nature, including professors, researchers, and students at various stages. Accordingly, we will attempt below to define the general meaning of scientific research.

1. Definition of Scientific Research:

"Scientific research is a systematic, controlled, empirical and critical investigation of natural phenomena guided by theory and hypothesis about the presumed relations among such phenomena."

"Scientific research is the process of investigating natural phenomena using the scientific method for the purpose of discovering new facts and developing scientific theory."

"Scientific research also aims at the review of facts, laws and theories in view of newly discovered facts, and the practical applications of such facts, laws and theories. Therefore, scientific research is the continuous search for knowledge and understanding of reality carried out through the scientific method. Its result is scientific knowledge." Some view scientific research as: "An organized scientific activity, a way of thinking, and a method of looking into phenomena and uncovering facts, relying on objective methods in order to understand the relationship between these facts, and then deriving interpretative principles and laws."

Thuraya Malhas defines it as: "A method of discovering, exploring, developing, testing, and verifying knowledge in a precise way, with deep critique, then presenting it in a complete manner with intelligence and awareness so that it proceeds within the path of global civilization, and contributes to it in a living and comprehensive way. But if research strays from this goal, it will not be given life, and the efforts expended for it will be wasted."

Based on the definitions previously presented, an operational definition can be proposed as follows:

Scientific research is an organized process based on specific standards, including accuracy, objectivity, and the avoidance of subjectivity and randomness. This process is undertaken by the competent entities possessing the necessary qualifications in scientific fields, such as professors, researchers, and students in the three stages (Bachelor's, Master's, Doctorate), with the aim of addressing various current and future phenomena, issues, and problems, in order to achieve comprehensive sustainable development.

2. Characteristics of Scientific Research:

Scientific research is characterized by a set of features, the most important of which are:

- It begins with raising a question or a set of questions in the researcher's mind about certain life issues and matters that provoke inquiry.
- Defining the problem and formulating it in specific terms with clear and uncomplicated scientific terminology.
- Establishing a plan that directs the researcher toward finding solutions to the raised problem.
- Scientific research addresses the main problem by raising sub-problems, and the solutions to the sub-problems constitute a solution to the main problem.
- The directions of scientific research are determined by hypotheses based on clear assumptions or premises.
- Scientific research is not limited to collecting known information, data, and facts only, but also to deriving new meanings, concepts, and interpretations that may differ among researchers.
- Scientific research is characterized by periodicity, which means that solving a research problem may constitute the beginning of the emergence of new research problems, and other researchers may follow the same procedures in addressing new research and thus verify its validity, and they may also use the research results to formulate a new research problem.
- Scientific research relies on facts, not on imagination and guesswork.
- It relies on analysis and the derivation of relationships, since the human mind has a limited ability to understand and comprehend complex phenomena unless it depends on analysis to simplify those phenomena and understand the factors and relationships governing them.
- It relies on accurate measuring tools, with the aim of reaching precise results.
- The focus in scientific research is on adopting scientific methods based on objectivity and neutrality in identifying, analyzing, and addressing problems, finding appropriate, convincing, and legitimate scientific evidence and presenting it with honesty and integrity, as well as mental and scientific openness and a

sincere willingness to accept other opinions. Added to the above is also determining the purpose and goal of the research and combining theory and practice in addressing the raised research problem.

Second: Training Programs

In order to know and understand the general meaning of training programs, it is necessary to understand the meaning of training, which we will address in the following steps:

1. Training:
   Edwin Flippo defines it as: "... the process of increasing the knowledge and skills of an employee to perform a specific job."

Michel Armstrong defines it as: "... the systematic development of the knowledge, skills, and attitudes required by an individual to perform a specific task or job appropriately."

It can also be defined as: "A planned process of modifying behavior, knowledge, or skill through learning experiences to achieve effective performance in an activity or a set of activities. Its purpose, in the case of work, is to develop the individual's capabilities and meet the current and future needs of the organization."

Thus, training can be described as an organized process that enables employees and workers to learn and acquire new knowledge, skills, and behaviors that qualify them to deliver distinguished job performance characterized by quality and high efficiency, thereby contributing to enabling the institution to improve its performance and ability to respond to current and future development challenges.

2. Guide to Managing Training Programs:

There are a set of methodological rules that must be followed during the preparation and management of any training program, which usually include four methodological rules defined as follows:

2-1. Identifying Training Needs:

This is a basic step in preparing and managing training programs, because of its significant impact on the efficiency of training programs and the effectiveness of training policies in improving the performance of the individual and the institution. For this reason, it is classified as the first and most important stage in developing the workforce.

2-2. Planning and Designing Training Programs:

This is the process that connects the training needs and the objectives that must be achieved through the training program, and links the methods, resources, and training topics together in an organized manner.

2-3. **Implementing Training Programs:**

This is the process in which the outputs of the training needs assessment and the planning and design process are translated from the theoretical level to the practical level.

2-4. Evaluating Training Programs:

According to Goldstein, training evaluation is the systematic collection of data and information related to the success of training programs.
The model of Donald L. Kirkpatrick is one of the most important models adopted in evaluating training programs, as this model focuses on four levels: the level of reaction, the level of learning, the level of behavior, and the level of overall results achieved by the organization.

Third: Human Resources in the Municipality

1. The Municipality:

It is one of the most important administrative bodies reflected by the local administration system. It thus represents one of the forms of administrative organization in the state, undertaking a set of powers and duties, which makes it responsible for efficiently managing its facilities, and obligated to strive to achieve its legitimate purposes.

Therefore, it can be concluded from the above that the municipality is one of the outputs of the administrative reform policies in the state, aimed at reducing the burdens and responsibilities of central bodies, in order to bring the administration closer to the citizen. This contributes to speeding up the response to citizens' needs. Thus, the municipality has become responsible for improving and developing public service and the process of local development.

2. Human Resources Active in the Municipality:

In order for the municipality to perform its assigned tasks, it must have qualified human resources to perform a set of functions that have become within the jurisdiction of the municipality. The municipality often has diverse human resources, due to several reasons, the most important of which is that the municipality is an administrative body for activating the local administration system.

Among the elements of local administration is the possession of legal personality, which is the legal basis that distinguishes it from administrative centralization. This truth was confirmed by the French jurist Georges Vedel, who said: "Legal personality is the natural result of the establishment of decentralization and for the protection of its legal interests."

However, possessing legal personality is not sufficient to embody the idea of local administration; there must be elected local bodies that supervise the management of public affairs of local populations on their behalf. This idea comes from the premise that since it is impossible for all residents of regions or countries to directly manage their public affairs themselves, it is necessary that those elected on their behalf carry out that task. Thus, elections are the basic method by which local councils representing the will of the regional public legal personality are formed. This is considered by many researchers to be the essence of local administration.

From this, it can be concluded that the elected members constitute one of the most important human resources active in the municipality and often take on the task of managing local affairs.

In light of the accelerating and endless diversity of local community needs, this has led to the development of the functions undertaken by the municipality in many administrative, economic, social, and cultural fields. These functions require planning and implementation by qualified public employees, including administrators, engineers, and technicians. This category is referred to as local employees.

John Stuart Mill provided a definition describing local employees as follows: "They constitute the permanent force of governmental interests. Those who do not change with political changes but remain in their positions to assist the elected body with their experience and traditions, placing at its disposal their knowledge of technical performance methods, and carrying out the details of work under its general supervision..."

In addition to the above, the municipality includes other categories within its human resources. Among these categories are the professional workers, who constitute the group responsible for technical tasks such as maintenance, as well as tasks related to hygiene, public cleanliness, and urban planning. Alongside this, the municipality may resort to contracting experts and consultants in order to benefit from their expertise in the process of local development. This group forms a vital element within the municipality's human resources, due to the knowledge, skills, and behaviors they possess which are consistent with contemporary developments.

Axis Two:
Mechanisms for Strengthening Communication and Interaction Between Scientific Research and the Management of Training Programs

What is meant by strengthening communication is providing the appropriate environment that enhances continuous communication and interaction between the actors operating at the level of universities, institutes, research centers, and laboratories—professors, researchers, and students—and the actors operating at the level of the municipality and its affiliated institutions—elected members and local employees. This is for the purpose of studying and analyzing development issues concerning the municipality, including the issue of developing the capacities of its human resources through the preparation and management of training programs according to objective standards that are consistent with the nature of contemporary developments.

Therefore, we will attempt to present a proposed scientific conception for strengthening communication between scientific research and the management of training programs as follows:

First: Activating the Idea of Community Participation in the Municipality

The current and future development challenges cannot be faced or responded to by the municipality in isolation from the active parties within the local community, particularly the scientific elites active in the field of scientific research. Hence, it has become necessary to activate the idea of community participation as an approach to respond to developmental challenges and to manage local affairs in a manner that meets the needs of the local community.

Community participation is considered one of the pillars of the new concept of the state, which adopts what is called "governance" or "societal governance." This refers to the political, economic, and social practice of state authorities, aimed at managing state affairs across all fields and levels. It reflects the mechanisms and procedures of the various institutions of the state, with the aim of enabling citizens to express their opinions, practice their rights, and fulfill their obligations.

Thus, activating the idea of participation—considered one of the components of governance or societal governance—requires providing opportunities to all qualified individuals and groups of the local community, in accordance with the law, enabling them to express their opinions and participate in preparing, implementing, monitoring, and supervising local plans and projects, either directly or indirectly. This is in order to achieve political, economic, and social development, thereby improving the quality of life for local residents and meeting their needs fairly, without harming national interests through regional disparity conflicts.

The local actors active in the field of scientific research are among the most important actors whose capacities should be relied upon in managing local affairs. This is because they are closely connected to the developments occurring in administrative, technological, economic, social, and cultural fields globally, especially in advanced countries pioneering in local governance. Moreover, these actors focus on handling issues in their field of specialization with objectivity and avoiding subjectivity, which results in accurate recommendations and findings that can be implemented in reality.

Since the beginning of the 21st century, the development process has been measured by the level of investment in minds, as confirmed by the thinker *Mehdi El-Mandjra* through his vision that "the real capital that is not subject to decay is the type of minds being shaped, and the quality of people who are genuinely trained."

Therefore, it is very important to provide opportunities for actors in the field of scientific research to participate in the management of municipal affairs, including the aspect related to the management of training programs for its human resources, which is the cornerstone for preparing competent individuals capable of delivering outstanding performance.

Speaking of the importance of scientific research in managing municipal affairs, Professor *Adel Khudair Al-Kubaisi* explained, through his intervention entitled *"Aspects of Shortcomings and Deficiencies in Theses and Dissertations Regarding Development Problems and Challenges: Causes and Remedies"* during the scientific forum at the College of Graduate Studies at Naif University for Security Sciences in Riyadh, that "scientific research contributes to identifying the needs of comprehensive and sustainable development, addressing its problems, anticipating its challenges, providing its requirements, weighing its options, introducing its theories, distributing its expertise, and sustaining its resources. Since man is both the goal and means of development, research and studies must give him priority and subject him to study and analysis in all his forms, conditions, and activities."

The emphasis on the importance of involving local actors in the field of scientific research did not come out of nowhere. Rather, it stems from the growing global attention to several issues closely linked to development, chief among them the role of universities and scientific research centers in managing the process of local development. These have become the tools through which this process is rationalized, given that universities and research centers serve as consultative centers, think tanks, and knowledge banks. They conduct scientific studies aimed at monitoring reality and defining future features for all.

Moreover, scientific research is no longer an academic luxury practiced by a group of researchers isolated in ivory towers. Rather, its essence is now measured by the effective role it plays in the development of contemporary human societies, regardless of their rank on the ladder of civilizational progress. No two disagree on the importance of scientific research in opening the way for creativity and excellence among individuals and peoples of these societies, and in equipping them with the ability to acquire the foundations of growth on sound principles.

On another note, allowing local actors to participate in managing local affairs requires re-engineering the level of competence of municipal human resources, especially elected members in the form of presidents of municipal popular assemblies, since they represent the authority supervising administrative leadership within the municipality. This is intended to enable them to know, understand, and activate the idea of involving actors in scientific research as an approach to studying and addressing issues related to local development. This requires organizing periodic training programs for local administrative leaders, including themes on the idea of community participation and its importance in rationalizing the management of local development. It also requires encouraging professors, researchers, and university graduates, especially youth, to run for local elections, as they are the group knowledgeable about modern approaches in managing local development, including the approach of community participation.

As for local actors, they must bear their responsibility, which lies in striving to present initiatives that would enhance the municipality's performance. This requires preparing theoretical and applied scientific research consistent with contemporary developments and applicable to the local environment.

Second: Electronic Platforms and Their Role in Enhancing Means of Communication and Continuous Cooperation Between Actors in Scientific Research and Those Managing Municipal Affairs

Activating the community participation approach at the municipal level is a necessary orientation to provide real opportunities for local actors in the field of scientific research to enrich the management of local affairs, including the aspect related to managing training programs, with the scientific knowledge, skills, and expertise they possess. However, it is also necessary to support this approach with other approaches of a technological nature, as they provide the appropriate foundation for strengthening communication and continuous interaction between the municipality and local actors.
Therefore, it is very important to establish electronic platforms to enhance the role of scientific research in developing the management of training programs. As an initial conception, the main elements that these platforms should contain can be presented as follows:

1. **At the level of participants in the digital platforms:**

The digital platform should serve as a space for continuous communication between the municipality's human resources—specifically elected members, public employees, and professional workers—and local actors active in the field of scientific research—specifically university professors, researchers, PhD students, and experts in capacity-building and development. It is very important to subscribe to the platform by opening a professional electronic account and attaching all personal, academic, and professional information of the participants.

2. **At the level of activities to be addressed through the digital platforms**:

The scientific conception of creating a digital platform to strengthen communication and interaction between the municipality and local actors in the field of scientific research generally aims to address development issues based on objective and precise standards, in order to reach the highest levels of quality and rationality in providing public services and managing local development.
There is no doubt that developing human resource capacities is a key factor in enhancing performance levels. However, developing capacities requires preparing and managing training programs according to precise and objective standards. Therefore, among the most important activities to be considered when addressing development issues through digital platforms are all aspects related to training programs: identifying training needs, planning and design, implementation, and evaluation. These four stages constitute the basic starting point for any capacity development process. The main elements to focus on can be outlined as follows:

2-1. Job description:

Relying on scientific methods in preparing job descriptions helps achieve accurate and clear results. A scientifically based job description makes it possible to determine the qualifications required for each position, thereby facilitating the measurement of training needs. This process should be carried out in coordination between the municipality and actors in scientific research. Undoubtedly, adopting digital platforms will enhance the proper management of this developmental task.

2-2. Adopting periodic field studies for training program management:

It is very important to rely on digital platforms in conducting periodic field studies every quarter, semester, or year, by preparing electronic questionnaires and distributing them through the platform to the target sample. This aims to collect the necessary information and data to achieve a number of objectives, most importantly evaluating the performance level of individuals, groups, and the municipality as a whole. At the same time, it is essential to emphasize the importance of these field studies in enabling the development of individual and institutional capacities, with the aim of attracting as many human resources as possible to participate in such important studies.
In addition, the results of the evaluation must be used as a starting point for future studies such as scientific articles, national and international conferences, academic training research projects, and doctoral projects. This helps achieve the following benefits:

2-2-1. At the level of identifying training needs:

- Identifying strengths and weaknesses in performance and the main problems that may hinder performance improvement and development at the level of municipal human resources, organizational structures, and departments managing municipal affairs, as well as at the level of the municipality as a whole.

- Determining whether improving and developing performance in the municipality requires nominating its human resources for training.
- Identifying the organizations and departments that need to nominate their human resources for training.

2-2-2. At the level of planning and implementing training programs:

- Identifying the groups in need of training programs (elected members, public employees, professional workers).
- Identifying the level of capacities to be developed among the trainees, generally consisting of three levels: knowledge, skills, and behaviors.
- Determining the type of training program (internal at the municipal level, external at the level of local, regional, or central training institutions, or external at the level of international training institutions).
- Defining the time frame of the training program—whether developing the capacities of municipal human resources requires a long-term or short-term program.
- Specifying the subjects and content of the training program, the training methods to be adopted during the program, the type of trainers supervising the training sessions, as well as the budget to be prepared for participation in the training program.
- Proposing leading institutions in the field of capacity-building and development that are distinguished by successful experiences in fields that have become part of the municipality's responsibilities, which helps achieve positive feedback at the level of performance.

2-2-3. At the level of evaluating the outputs of training programs:

Evaluating training programs is one of the most important stages that must be observed to determine the effectiveness and efficiency of the program in enabling trainees to develop their knowledge, skills, and behaviors, and the impact of this on their individual performance as well as the performance of their institution as a whole. Therefore, it is very important to take into account the results of field studies adopted through digital platforms in order to reach the following conclusions:

- Determining levels of reaction, learning, behavior, and overall results achieved at the level of organizations and departments whose human resources participated in training programs.
- Determining whether the training program should continue.
- Identifying needs related to improving and developing the training program.
- Ensuring learning.
- Rationalizing the impact of the training process.
- Determining a training program that is aligned with the organization's goals (aligning training with the objectives the municipality seeks to achieve).
- Identifying methods and mechanisms that make the training program contribute to improving and developing the knowledge, skills, and behaviors of the trainees.
- Comparing the cost and return of the training process.
- Identifying strengths and weaknesses in the training program.
- Assessing whether the trainees have benefited from the training process.
- Enabling the future marketing of training programs.
- Preparing a background for decision-making.
- Monitoring the quality of the training process.
- Determining whether the training program justifies the approved cost or budget.
- Acquiring the ability to make informed decisions, such as stopping ineffective training programs and expanding effective ones.
- Determining the effectiveness of the various components of the training program, such as program content, facilities, methods, equipment and supplies, trainers, and the training schedule.
- Identifying the number and type of employees likely to participate in future training programs.
- Gaining practical insight to design more effective future training programs.
- Determining the degree of alignment of the training program with training needs and its ability to cover them.
- Assessing the extent to which trainees apply the acquired knowledge, skills, or behaviors to their job performance.

Third: Activating the Artificial Intelligence System

Recent developments in deep learning have produced artificial intelligence systems capable of matching or even surpassing human intelligence in certain core functions. However, reaching the level of "general artificial intelligence," or the level that enables machines to perform the full range of cognitive tasks that the human mind can accomplish, still requires decades. Nonetheless, many machine learning systems have already been developed for specific commercial uses, with highly diverse applications. They are capable of providing customer service, managing logistics, monitoring factory equipment, rationalizing energy consumption, and analyzing medical records. The McKinsey Global Institute (MGI) confirmed in recent research that machine learning technologies are widely applicable across almost all industries.
Therefore, adopting an artificial intelligence system in the management of training programs would contribute to rationalizing this process. This requires adopting several measures to consolidate this orientation, foremost among them activating the role of scientific research as a basic entry point into this process, given that artificial intelligence is one of the recent outputs reflected by scientific research in the field of science and technology.
Accordingly, understanding and knowing the general meaning of artificial intelligence, the ability to control its different models, and the proper application of these in various fields, including the field of training program management, requires the presence of highly competent actors in scientific research. The availability of these actors will help achieve several advantages, the most important of which is the development of new artificial intelligence models in the areas of identifying training needs, planning and designing training programs, implementing training programs, and evaluating training programs.

Conclusion:

At the conclusion of this study, it can be said that scientific research has become one of the important approaches that should be adopted to rationalize the management of training programs for human resources in the municipality. This is based on the fact that scientific research contributes to aligning training programs with the current and future developments in administrative, economic, social, and cultural fields. Therefore, it is necessary to provide an appropriate environment that attracts active stakeholders in the field of scientific research to take the initiative in presenting modern studies, in order to contribute to the development and rationalization of local affairs management, particularly the management of training programs, which constitute the cornerstone for improving and developing the performance of municipalities.
We have reached a set of findings and recommendations, the most important of which can be summarized as follows:
Acknowledgements: no
Conflict of interest: no

1- Findings:

- The management of training programs for human resources in the municipality cannot be developed without the involvement of local actors active in the field of scientific research.
- Community participation is among the main approaches that help activate the role of scientific research in developing the municipality's capacities.
- Digital platforms are among the most important tools that help document and strengthen continuous communication and interaction between those managing municipal affairs and the actors active in scientific research, which contributes to achieving several outcomes related to developing training program management, most notably:
    - The ability to conduct periodic evaluation of municipal performance levels according to scientific standards.
    - Providing scientific mechanisms that help collect the necessary information and data to identify the training needs of municipal human resources.
    - The ability to plan, design, and implement training programs in a way that responds to the needs of the municipality and the local community.
    - The ability to evaluate the outputs of training programs according to scientific standards, which helps identify strengths and weaknesses, and consequently propose solutions that enhance the quality of training programs.
    - Artificial intelligence represents one of the most important outcomes of scientific research that should be adopted to rationalize the management of training programs.

2- Recommendations:

Among the most important recommendations that can contribute to the development of training program management, particularly at the level of Algeria in particular and the Arab countries in general, are the following:

- It is very important that those responsible for managing municipal affairs, especially administrative leaders, possess extensive knowledge and awareness of the importance of involving local actors, foremost among them the scientific elite, in addressing the present and future issues of local administration, including the issue of developing and rationalizing the management of training programs for local human resources.
- It is highly important to provide the necessary incentives for the scientific elite, especially young people, to run for membership in elected local councils, given that the scientific elite often rely on research in addressing development issues.
- Modern mechanisms should be adopted to document and strengthen continuous communication and interaction between municipal managers and actors active in the field of scientific research, primarily through the establishment of smart digital platforms.
- Serious and extensive attention should be given to the field of artificial intelligence in scientific research, with the aim of acquiring the ability to activate it in rationalizing training program management.
- It is very important to conclude international cooperation agreements with leading institutions in the field of scientific research, in order to enable local actors active in this field to understand and become familiar with the latest scientific research developments, particularly modern artificial intelligence models, thereby acquiring expertise that qualifies them to contribute to the preparation of training programs that respond to contemporary developments.
- Material and moral support should be provided to local actors active in scientific research to encourage them to produce scientific efforts that enhance the efficiency and quality of training programs.

References

1. Abu Al-Ruz, M. H. M. (2005). *Developing a training program for educational administrative behavior in Jordanian secondary schools* (Unpublished doctoral dissertation). Amman Arab University for Graduate Studies.
2. Al-Qablan, G. S. F. (2017). *Community development and the factors influencing the decisions of administrative governors: A field study*. Dar Al-Khaleej for Publishing and Distribution.
3. Al-Sheikhli, A. (1983). *Theory of local administration and the Jordanian experience* (1st ed.). Arab Institution for Studies and Publishing.
4. Al-Taa'mnah, M. M. (2003, August 18–20). Local administration systems (concept, philosophy, and objectives). *First Arab Forum: Local*
5. *Administration Systems in the Arab World*. Arab Administrative Development Organization.
6. Alsalamah, A., & Callinan, C. (2021). Adaptation of Kirkpatrick's four-level model of training criteria to evaluate training programmes for head teachers. *Education Sciences, 11*(3), 1–25.
7. Bin Semsha, A. (2018). *Human performance in local administration*. Academic Book Center.
8. Boumediene, T., & Abdelnour, N. (2014). *The methodological foundations of research in political science* (1st ed.). Jisr for Publishing and Distribution.
9. Corrêa da Silva, J. G. (2022). Scientific research. *International Journal of Science and Research (IJSR), 11*(9), 635–648.
10. Kerlinger, F. N. (1986). *Foundations of behavioral research* (3rd ed.). Holt, Rinehart and Winston.
11. Kirkpatrick, D. L. (1970). *Evaluation of training*. ERIC Document Reproduction Service, ED057208, 40–61.
12. https://files.eric.ed.gov/fulltext/ED057208.pdf
13. Kraiger, K., Ford, J. K., & Salas, E. (1993). Application of cognitive, skill-based, and affective theories of learning outcomes to new methods of training evaluation. *Journal of Applied Psychology Monograph, 78*(2), 311–328.
14. Kulkarni, P. P. (2013). A literature review on training & development and quality of work life. *Journal of Arts, Science & Commerce, 4*(2), 138.
15. Lok, B. L. (2022). *The demand for soft skills and impacts of training and development on human resource outcomes and firm performance for the Malaysian manufacturing industry* (Doctoral dissertation, Universiti Tunku Abdul Rahman).
16. McKinsey Global Institute. (2017, March). *Artificial intelligence: Implications for China*. China Development Forum.

17. https://en.cdf.org.cn/jjh/pdf/1mkxe.pdf
18. Mezrig, A. (2012). The role of higher education and scientific research in achieving sustainable economic and social development. In Arab Administrative Development Organization (Ed.), *The role of scientific research in development* (p. 327). Arab Administrative Development Organization.
19. Perez-Soltero, A., Aguilar-Bernal, C., Barcelo-Valenzuela, M., Sanchez-Schmitz, G., Meroño-Cerdan, A. L., & Fornes-Rivera, R. D. (2019). Knowledge transfer in training processes: Towards an integrative evaluation model. *The IUP Journal of Knowledge Management, 17*(1), 7–40.
20. Statt, D. A. (2002). *Using psychology in management training: The psychological foundations of management skills*. Routledge.
21. Tachma, B. (2021). *Policies for improving local administration performance in light of contemporary developments* (1st ed.). Dar Al-Wafaa for Printing and Publishing.
22. Tachma, B., & Sbayane, M. (2023). Community participation as an approach to developing local administration performance: A study of the role of scientific research centers. *Journal of Constitutional Law and Political Institutions, 7*(1), 493–517.
23. Topno, H. (2012). Evaluation of training and development: An analysis of various models. *IOSR Journal of Business and Management, 5*(2), 18.
24. Tyagi, A. (2017). *Strategic measurement of human resource management*. Horizon Books (Ignited Minds Edutech Pvt. Ltd).

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Influence of Cyberbullying on the Development of Self-Esteem Among University Students: A Field Study on a Sample from the Faculty of Social and Human Sciences at Abdelhamid Ibn Badis University, Mostaganem, During the Academic Year 2024/2025

Mezhoudi Khoula
Djalili Bounaama University, Khemis Miliana.
Algeria
E-mail: K.Mezhoudi@univ-dbkm.dz

Boukassara Hayat
Djalili Bounaama University, Khemis Miliana
Algeria
Email: Boukassara.Hayat@univ-dbkm.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Cyberbullying, Self-Esteem, University Students, Digital Media, Psychological Well-Being, Social Interaction, Descriptive-Analytical Study, Regression Analysis

Abstract

The rapid expansion of digital communication platforms has transformed social interaction among university students, creating both opportunities for engagement and risks associated with maladaptive behaviors such as cyberbullying. This study investigates the prevalence of cyberbullying and its impact on self-esteem among university students at Abdelhamid Ben Badis University, Mostaganem. Employing a descriptive-analytical approach, the study utilized two standardized instruments: the Cyberbullying Scale (Hussein, 2019) and the Self-Esteem Scale (Bin Al-Sayeh, 2023). The sample consisted of 150 male and female students from the Faculty of Humanities and Social Sciences. Psychometric analyses confirmed the reliability and validity of both scales, with Cronbach's alpha coefficients of 0.749 for the Cyberbullying Scale and 0.806 for the Self-Esteem Scale, and Guttman split-half coefficients of 0.85 and 0.79, respectively.

The results indicate a high prevalence of cyberbullying among university students, with the mean score significantly exceeding the hypothetical average ($M = 97.40$, $SD = 19.61$, $t(149) = 18.36$, $p < 0.01$). Students also exhibited high levels of self-esteem ($M = 64.67$, $SD = 10.20$, $t(149) = 12.81$, $p < 0.01$). Regression analysis revealed a statistically significant negative relationship between cyberbullying and self-esteem ($\beta = -0.614$, $p < 0.001$, $R^2 = 0.102$), indicating that increased cyberbullying predicts lower self-esteem among university students. These findings highlight that cyberbullying not only persists in higher education settings but also poses a significant threat to students' psychological well-being, particularly in the context of self-perception, social confidence, and academic motivation.

The study underscores the importance of developing preventive strategies, including institutional regulations on digital behavior, awareness campaigns, and psychological support programs aimed at enhancing self-esteem and mitigating the harmful effects of cyberbullying. Moreover, it contributes to the growing body of research on cyberpsychology and provides empirical evidence to inform policy-making in educational institutions.

Citation. Mezhoudi K; Boukassara H. (2025). The Influence of Cyberbullying on the Development of Self-Esteem Among University Students: A Field Study on a Sample from the Faculty of Social and Human Sciences at Abdelhamid Ibn Badis University, Mostaganem, During the Academic Year 2024/2025. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1013–1030. https://doi.org/10.56334/sei/8.11.82

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 01.03.2025	Accepted: 12.06.2025	Published: 22.09.2025 (available online)

Introduction

In recent decades, the world has witnessed an unprecedented technological and communications revolution that has profoundly transformed human lifestyles and reshaped the ways in which individuals and societies interact. The rapid development of information and communication technologies has made the internet and smartphones indispensable tools for knowledge transfer, social networking, and cultural exchange. Within this context, social media platforms have emerged as one of the most prominent outcomes of this digital revolution. These platforms have not only helped bridge geographical and cultural divides but have also posed significant challenges, such as the erosion of cultural identity, the rapid spread of misinformation, and concerns over social values and digital security. Furthermore, the ways individuals engage with these technologies vary considerably—from balanced and constructive use to excessive or harmful misuse—which has significant repercussions for social life (Intesar Muhammad, 2020).

Amidst this massive and accelerating digital transformation, social media platforms such as Facebook, Twitter, Instagram, and others have become double-edged tools. On the one hand, they facilitate social interaction, knowledge dissemination, and cultural dialogue; on the other hand, they have fostered new and troubling forms of deviant behavior. Among the most concerning is **cyberbullying**, defined as the deliberate and repeated use of digital technology to inflict psychological, social, or even economic harm on others. Manifestations of cyberbullying include rumor spreading, threats, intimidation, harassment, and various forms of exploitation—whether sexual, material, or intellectual. Previous studies confirm that while the internet and mobile technologies offer novel opportunities for communication, they also create fertile ground for such harmful interactions (Tokunaga, 2010; Palermiti et al., 2017).

Cyberbullying can be understood as an extension of traditional bullying behaviors, but with an alarming shift: the use of digital technologies amplifies and accelerates the scope of harm. This phenomenon has become increasingly widespread due to the proliferation of smartphones, which integrate internet connectivity and instant multimedia sharing. These features make it easier for offensive content to be disseminated quickly and widely, thereby intensifying the destructive effects of cyberbullying. Research has shown that cyberbullying can lead to severe psychological consequences, including depression, anxiety, and social isolation, and in some cases, it may even be linked to extremist behavior (Al-Ammar, 2016; Bastug & Kircaburun, 2016; Lehto & Uusitalo, 2016).

The digital environment further complicates this issue by enabling anonymity, which emboldens perpetrators to engage in aggressive behavior without immediate accountability. Moreover, harmful digital content can spread rapidly and persist indefinitely, exacerbating victims' distress. Juvonen and Gross (2008) and Della Cioppa et al. (2015) highlight that this dynamic increases the reach and permanence of cyberbullying, magnifying its psychological and social impact. Indeed, victims of cyberbullying are at heightened risk of developing depression, anxiety disorders, and even substance abuse (Takizawa et al., 2014; Palermiti et al., 2017). Ybarra (2004) also found that such victims often experience aggression, social withdrawal, loneliness, and diminished self-esteem, particularly when they engage in deceptive online self-presentation.

Bullying in all its forms represents a serious behavioral and social problem with profound implications for individuals' well-being. Among university students, the consequences of cyberbullying are especially concerning. Victims often experience fear, withdrawal, social isolation, and declining academic performance. Moreover, research has consistently identified low self-esteem as both a predictor and a consequence of exposure to cyberbullying (Egan & Perry, 1998). Conversely, high self-esteem is associated with resilience, better coping strategies, and stronger academic adjustment.

Given the central role of self-esteem in shaping personality development, social relationships, and academic success, investigating its relationship with cyberbullying is crucial. University students represent one of the groups most vulnerable to this phenomenon due to their heavy reliance on digital technologies and their constant presence in online environments. Consequently, exploring the impact of cyberbullying on students' self-esteem provides valuable insights into both the psychological costs of the digital age and the need for preventive and intervention strategies within higher education contexts.

Literature Review and Theoretical Framework

Self-Esteem: Definitions and Perspectives

Al-Baqour (2002) defined self-esteem as *"the judgments that an individual makes about himself compared to others, reflecting his perceived abilities and skills to perform a specific task or achieve success"* (Alkhasawneh & Others, 2022, p. 1931). Similarly, Brenden (1995) conceptualized self-esteem as a fundamental human need that profoundly influences multiple aspects of human existence, including conscious living, self-acceptance, personal responsibility, self-assertion, meaningful living, and the preservation of personal integrity (Adawi & El-Sherbini, 2021, p. 385).

Considering self-esteem as a central factor shaping human behavior, Hayawi and Ben Salem (2022) argue that an individual's self-perceptions and self-judgments directly determine their positive or negative motivations to engage in adaptive or maladaptive social behaviors (p. 661). Kafawin (2003) further explained that low self-esteem often results from an individual's need for external validation. Conversely, when individuals are aware of their strengths and weaknesses, they can set meaningful goals and foster motivation. Self-confidence and the expectation of success thus play crucial roles in strengthening self-esteem (Kafawin, 2017, p. 45).

Rosenberg (1979), one of the leading scholars on the subject, defined self-esteem as the evaluation an individual typically makes of themselves, involving an orientation toward approval or disapproval. High self-esteem reflects feelings of competence, self-worth, and self-respect, while low self-esteem is associated with self-rejection and diminished confidence (Ali, 2021, p. 149).

From an educational perspective, self-esteem is considered a key psychological variable, particularly at the university level. It is among the most influential determinants of the student learning experience and academic achievement. Researchers agree that the acquisition of various skills is more effective when coupled with positive self-esteem, which plays a central role in guiding students' behavior and achievement (Qadi, 2019, p. 19).

Self-Esteem and Demographic Variables

Numerous studies have examined self-esteem across demographic factors. For example, Qadi (2019) and Miri (2023) reported no significant differences in self-esteem based on gender. In contrast, Bin Al-Sayeh (2023) found higher self-esteem levels among males. Furthermore, Kafawin (2017) and Ali (2021) demonstrated that self-esteem differs significantly by academic specialization, suggesting that disciplinary contexts may influence self-perceptions.

Cyberbullying and Self-Esteem

Recent research has highlighted a negative association between cyberbullying and self-esteem. Victims of cyberbullying often report diminished self-esteem (Chang et al., 2013; Cénat et al., 2014). Although the causal direction remains contested, some scholars argue that persistent online harassment may lead to decreased self-esteem, which, in turn, can have profound consequences for young people's well-being, including heightened vulnerability to depression, psychological maladjustment, and even suicidal ideation (Palermiti et al., 2017).

For instance, Mohamed et al. (2023) reported that 24.8% of adolescent students experienced social isolation, 29.4% were victims of cyberbullying, 37.3% reported low self-esteem, and 17.1% expressed suicidal thoughts. Their findings confirmed an inverse relationship between cyberbullying exposure and self-esteem. Similarly, Patchin and Hinduja (2010), Hussein and Mahmoud (2021), and Al-Nuaimi et al. (2023) found that both bullies and victims exhibited lower levels of self-esteem, highlighting the bidirectional impact of cyberbullying. By contrast, Ahmed (2023) reported no statistically significant correlation between the two variables, suggesting that contextual or cultural differences may play a role.

Purpose of the Study

Given the widespread use of digital technologies among university students, this study aims to investigate the impact of cyberbullying on students' self-esteem, as this group is particularly vulnerable to the negative consequences of online aggression. The study seeks to answer the following research questions:

1. What is the level of cyberbullying among university students?
2. What is the level of self-esteem among university students?
3. Does cyberbullying affect self-esteem among university students?

Hypotheses

- The level of cyberbullying among university students is high.
- The level of self-esteem among university students is high.
- Cyberbullying has a significant impact on the self-esteem of university students.

Objectives of the Study

- To determine the prevalence of cyberbullying among university students.
- To assess the level of self-esteem among university students.
- To examine the impact of cyberbullying on students' self-esteem.

Significance of the Study

The importance of this study stems from both the relevance of its topic and the significance of its target population. Cyberbullying is a contemporary and pressing issue that threatens the mental health of students. In the Arab and Algerian context, research on cyberbullying remains relatively new, particularly in relation to its effects on university students. By exploring this issue, the study provides insights into how digital misuse affects self-esteem, academic achievement, and overall psychological well-being. The findings are expected to contribute to preventive and therapeutic intervention programs, as well as to the development of strategies aimed at reducing the prevalence of cyberbullying and mitigating its harmful effects.

Theoretical Framework

Cyberbullying

Patchin and Hinduja (2010) define cyberbullying as behaviors involving harassment, intimidation, or threats delivered through digital means, such as sending or posting humiliating or threatening texts, images, or videos online without consent. Similarly, Smith et al. (2008) describe cyberbullying as *"an intentional act of aggression by a group or individual, using electronic forms of communication, repeatedly and persistently against a victim who cannot easily defend themselves"* (p. 376).

Definition of Cyberbullying

According to Denmark (2014), cyberbullying is defined as the deliberate and hostile use of communication technologies to inflict harm on another person. It is regarded as a unique phenomenon of the twenty-first century, characterized by the use of cyberspace to transmit aggressive messages or content directed toward others. Billy Belsey, who first coined the term *cyberbullying*, defined it as the use of information and communication technologies to engage in intentional, repeated, and hostile behaviors—either by an individual or a group—aimed at harming others (Ramadan, 2019, cited in Yoob, 2023, p. 34).

Methods of Cyberbullying

Cyberbullying is perpetrated through a wide range of digital channels, as aggressors exploit modern communication platforms to inflict harm. These methods include the use of social media, text messages, emails, phone calls, fake web links, and chat or messaging applications. Smith et al. (2008) emphasized that these platforms allow bullies to expand the scope of psychological and social harm, facilitated by their rapid reach and the possibility of anonymity. Hinduja and Patchin (2009) further argue that the repetitive and deliberate nature of cyberbullying intensifies its effects, rendering it more severe than traditional forms of bullying, particularly because the victim often finds it difficult to defend themselves in digital environments.

Forms of Cyberbullying

Cyberbullying manifests in diverse forms, varying according to the methods used and the intent of the aggressor. Direct forms may include technical harm (e.g., sending viruses or changing passwords), verbal abuse (e.g., threats and insults), nonverbal abuse (e.g., posting disturbing images), or social exclusion (e.g., removing the victim from virtual groups). Indirect forms include more concealed practices such as hacking devices, stealing personal information, impersonation using false identities, and spreading defamatory content designed to damage reputations (Yoob, 2023).

Building on these distinctions, Beran and Li (2007), Willard (2007), and Ben Arabiya (2023) classified cyberbullying into several key categories:

- **Cyber Anger:** The transmission of hostile or offensive messages to a victim, either within group settings or through private digital communication.
- **Cyber Harassment:** Persistent and repeated sending of abusive or intimidating messages via email or messaging platforms.
- **Cyber Dialogue:** A severe form of harassment that includes explicit threats of harm, excessive verbal abuse, or defamatory online discussions.
- **Cyber Denigration:** The dissemination of harmful, false, or derogatory content about a victim to others, often in the form of posts or public statements.
- **Impersonation:** Assuming the victim's identity in order to publish damaging content or to mislead others into perceiving the victim negatively.
- **Exposure and Privacy Violation:** Unauthorized sharing of personal messages, private images, or sensitive information, whether digitally or physically.
- **Exclusion:** Intentional ostracism of the victim from online communities or platforms, often coupled with efforts to encourage others to exclude the individual, thereby amplifying their psychological distress.

Statistics on Cyberbullying

Statistical evidence underscores the growing prevalence of cyberbullying globally. Patchin (2016), reporting on findings from the Cyberbullying Research Center, revealed that:

- 18% of children and adolescents worldwide had experienced cyberbullying.
- 70% of internet users globally reported having encountered online abuse at least once.
- Only 15% of students admitted to being victims of cyberbullying.

- Approximately 10% of victims never reported their experiences to an adult.
- 64% of cyberbullying victims stated that it negatively impacted their academic performance and fostered fear and insecurity.
- 79% of parents reported that their children had received physical threats while engaged in online gaming (Yoob, 2023, p. 34).

More recent data (2018–2022) reflect an upward trend in cyberbullying. Among boys, the proportion engaging in cyberbullying increased from 11% to 14%, while among girls, it rose from 7% to 9%. Reports of victimization also grew, from 12% to 15% among boys and from 13% to 16% among girls. This escalation coincides with the increasing amount of time adolescents spend online. As the World Health Organization (2024) stresses, these findings highlight the urgent necessity for multi-stakeholder interventions involving educators, parents, policymakers, and community leaders to promote digital literacy, enhance online safety, and mitigate the harmful effects of cyberbullying.

Self-Esteem

Al-Anzi (2019) defines self-esteem as an individual's general evaluative orientation, characterized by relative stability and encompassing the person's judgment of themselves—whether positive or negative—based on both internal and external determinants. In a similar vein, Baccini and Ramdhani (2017) describe it as an affective process through which the individual evaluates the self-image shaped by beliefs, values, emotions, thoughts, and attitudes. This process includes acceptance or rejection of oneself, the perception of worthiness and merit, and the sense of competence in social interactions.

Hewitt (2009) and Smith and Mackie (2007) emphasize that self-esteem represents the overall emotional evaluation that an individual attributes to the self. It reflects cognitive assessments as well as affective experiences, such as feelings of pride or shame. In this regard, self-esteem may be viewed as the positive or negative judgments directed toward the self (Adawi & El-Sherbini, 2021). Cooper Smith adds that self-esteem consists of a set of attitudes and beliefs recalled by an individual when confronting the world, encompassing beliefs about the likelihood of success, the potential for failure, and the amount of effort required (Abo-Ghali, 2012).

Scholars have addressed self-esteem from multiple perspectives. One approach considers it as an evaluation, whereby individuals and others form judgments about the meanings attached to the self. These meanings manifest across dimensions such as physical self, identity, self-concept, and self-perception, and are reflected in communicative behaviors (Shaqfeh, 2009). Another perspective views self-esteem as a need. Maslow distinguishes between the need for self-appreciation—associated with achievement, efficiency, self-confidence, and reliability—and the need for prestige, recognition, and admiration from others (Ahmed, 2010).

Self-esteem has also been conceptualized as a condition. Kristen and colleagues (1999) describe it as an overall self-perception involving evaluative judgments of both positive and negative dimensions, with positive self-appreciation linked to psychological well-being and negative judgment associated with depressive tendencies (Ibn Al-Sayeh, 2023). From yet another perspective, self-esteem is seen as a tendency, reflecting positive feelings toward the self, such as competence, self-admiration, strength, and the perception of being worthy of love (Douara, 2023). It may also be understood as an expectation shaped by social feedback. Adler highlights the connection between inferiority feelings and low self-esteem, while Allport underscores the relationship between perseverance, strength, and self-esteem. Existential approaches, such as those of Rollo May, further associate it with the fundamental question of existence itself ("to be or not to be") (Richard & Scolt, 1989).

Several theoretical models have provided deeper insight into the dynamics of self-esteem. Carl Rogers' self-theory (1959), as explained by Al-Zyoud (2008), situates the self at the center of personality, distinguishing between the actual self and the ideal self. Psychological adjustment occurs when harmony exists between these two aspects, whereas incongruence results in maladjustment and emotional difficulties (Al-Saeedi, 2021). Rosenberg (1965), as noted by Al-Ma'aytah (2008), considers self-esteem as a general orientation toward the

self, influenced by socialization processes, family, schooling, and peer relationships. His view emphasizes the comprehensive nature of self-esteem as a global evaluation rather than a situational or fragmented judgment.

Ziller's theoretical perspective (1973) underscores the role of social interaction and comparison in shaping self-esteem. He argues that self-esteem acts as a mediator between the individual and the social environment, exerting either positive or negative effects on adjustment. Moreover, self-esteem is seen as developing within the framework of social reality, where changes in one's environment directly affect self-evaluation (Jaballah, 2002; Miri, 2023). Coopersmith's contributions (1976), discussed by Al-Hamshari (2013), distinguish between genuine self-esteem, reflecting authentic self-worth, and defensive self-esteem, which masks an underlying lack of self-worth. He identifies achievements, values, aspirations, and defenses as key determinants of self-esteem, and highlights the importance of parental practices such as empowerment, encouragement of positive behavior, and respect for autonomy in fostering healthy self-esteem (Al-Nuaimi & Abu Eish, 2023).

Previous research further illustrates the link between self-esteem and cyberbullying. Patchin and Hinduja (2010), in a study of 1,963 American students, found a negative correlation between cyberbullying and self-esteem. Both perpetrators and victims reported lower self-esteem compared to students not involved in bullying (Dahmani, 2023). Al-Kafawin (2017) examined the level of self-esteem among students at Tafila Technical University and found generally high levels, with notable differences in favor of female students, students in scientific disciplines, and those from rural areas. The study recommended further exploration of self-esteem in relation to other variables across educational contexts. Elizabeth (2018), in research on female students' use of social media, revealed that victims of cyberbullying often exhibited isolation, loss of confidence, and withdrawal from online interactions. The study highlighted both verbal and physical dimensions of bullying and underscored the mitigating role of family and school interventions in reducing its prevalence (Ada, 2023).

Basyouni and Al-Harbi (2020) conducted a study examining the relationship between cyberbullying and psychological loneliness among female students of the College of Education at Umm Al-Qura University. The study aimed to assess the prevalence of cyberbullying among female university students and its association with feelings of psychological loneliness. The sample comprised 133 female students representing various academic majors within the college. The findings revealed a statistically significant correlation between psychological loneliness and engagement in cyberbullying behaviors at the 0.05 significance level. Additionally, the mean scores on the cyberbullying scale ranged from medium to high, indicating that the scale effectively captured the reality of cyberbullying behaviors among female students. The psychological loneliness scale also yielded medium-level means, suggesting that participants experienced moderate psychological loneliness.

Hussein, Younis, and Mahmoud (2021) investigated the relationship between school bullying and self-esteem among pupils in the first cycle of basic education. The study included a sample of 210 male and female students, aged 9–12 years, from Al-Farouq Omar Institute. Data were collected using two scales measuring bullying behaviors and self-esteem. Statistical analysis demonstrated a significant negative correlation at the 0.01 level between bullying behavior and self-esteem. Gender differences were observed, with males exhibiting higher scores in total bullying, physical bullying, and property violations, whereas no significant gender differences were found in social, verbal, or psychological bullying. Female students displayed higher self-esteem levels than their male counterparts. Moreover, self-esteem scores were significant predictors of bullying behavior.

Ahmed Dahmani Abdelkader (2023) explored the relationship between cyberbullying and self-esteem among graduate students at the École Normale Supérieure in Bouzaréah, Algeria. The study sampled 52 graduate students from the English and History & Geography departments, representing both middle and secondary education specializations. Employing a descriptive methodology with cyberbullying and self-esteem scales, the results indicated no statistically significant correlation between cyberbullying and self-esteem. There were no gender differences in cyberbullying levels; however, significant differences emerged based on specialization profiles.

Douara Ahmed (2023) examined the relationship between self-esteem and learning motivation among Social Sciences students at the University of Tiaret, Algeria. The sample included 240 students from the first and third

academic years of the Social Sciences Department during the 2020–2021 academic year. Using both a self-esteem scale and a learning motivation scale, the study found that students exhibited above-average self-esteem. A positive correlation was observed between self-esteem and learning motivation. Additionally, female students displayed higher self-esteem than males, and first-year students showed higher self-esteem than third-year students. The study recommended further research to investigate the nature of the relationship between self-esteem and learning motivation.

Al-Nuaimi, Safiya Ahmed, and Abu Eish, Basina Rachad (2023) conducted research on cyberbullying and self-esteem among female students of the College of Arts at Taif University. Utilizing a descriptive correlational design, the study sampled 200 female students randomly selected from the college. Data were collected using a cyberbullying scale and the self-esteem scale developed by Al-Nuaimat (2015). The findings demonstrated a significant negative correlation between cyberbullying and self-esteem, with students exhibiting high self-esteem overall. Cyber-attacks were the most common form of bullying, followed by cyber-harassment, cyber-exclusion, and cyber-stalking. No significant differences were found in cyberbullying levels according to academic specialization.

Al-Shammari (2023) investigated university students' awareness of the concept of cyberbullying. Using a descriptive approach, the study employed a questionnaire administered to a random sample of 200 undergraduate students at the University of Hail. Results indicated a high level of awareness regarding cyberbullying. Significant differences were observed based on college specialization, favoring students in scientific disciplines, while no significant differences were attributed to age.

Ben Al-Sayah (2024) examined self-esteem among students at Laghouat University and its variation according to gender. The study applied a self-esteem scale to a randomly selected sample of 540 students. Findings revealed generally high self-esteem among participants, with male students displaying higher levels than females.

Al-Kabir (2024) studied self-esteem among students of the Faculty of Education at Sabha University – N'Djamena, considering demographic variables such as gender, academic specialization, parental education, family income, and urban background. Using a descriptive correlational method, the study sampled 342 students and employed a 50-item self-esteem questionnaire. Results indicated low overall self-esteem among participants, with higher levels observed in females. No statistically significant differences were found in self-esteem related to specialization, parental education, income, or urban/rural background.

Commentary on Previous Studies. Previous research has examined cyberbullying in relation to various psychological and social variables, including loneliness and awareness (Basyouni & Al-Harbi, 2020; Al-Shammari, 2023), as well as its manifestations among university students (Elizabeth, 2018). Most of these studies employed descriptive methodologies, confirming that cyberbullying is prevalent at moderate to high levels and has negative psychological and social consequences. Sample sizes across these studies varied, reflecting differences in research scope and population.

Regarding self-esteem, several studies investigated its level among students, highlighting differences based on gender or academic specialization (Al-Kafawin, 2017; Bin Al-Saaih, 2024; Al-Kabir, 2024; Douara, 2023). These studies generally reported high levels of self-esteem, with differences favoring female students or certain academic majors. Sample sizes in these studies ranged from medium to large.

Research exploring the relationship between cyberbullying and self-esteem (Patchin & Hinduja, 2010; Al-Nuaimi & Abu Eish, 2023; Hussein et al., 2021) typically employed correlational designs and mostly confirmed a negative relationship, indicating that increased engagement in cyberbullying is associated with lower self-esteem. However, Dahmani's (2023) study found no significant correlation, which may be attributable to the relatively small sample size compared to other larger and more diverse studies.

Practical Aspects of the Current Study

Study Context and Limitations. The study was conducted at Abdelhamid Ben Badis University, Mostaganem, within the Faculty of Humanities and Social Sciences, during the 2024/2025 academic year. The study's findings are therefore limited to this specific population and context.

Methodological Procedures. The research adopted a descriptive-analytical approach, which was considered the most appropriate for addressing the study objectives. The researchers utilized relevant instruments to collect, analyze, and interpret the necessary data effectively.

Study Instruments. Two primary scales were used to address the research questions: the Cyberbullying Scale and the Self-Esteem Scale.

The **Cyberbullying Scale**, developed by Ramadan Ashour Hussein (2019), consists of four dimensions with response options ranging from "Always" (3), "Sometimes" (2), to "Never" (1). The total scale score ranges from 34 to 102.

The **Self-Esteem Scale**, prepared by Ben Sayeh Masouda (2023), also comprises four dimensions. Responses are scored on a three-point scale: "Fully applicable" (3), "Sometimes applicable" (2), and "Never applicable" (1). Negative items are reverse-scored. Total scores range from 27 to 81.

Study Sample. The study sample included 150 male and female students from the Faculty of Social and Human Sciences at Abdelhamid Ben Badis University in Mostaganem. The distribution by gender is presented below:

Gender	Number	Percentage
Male	69	46%
Female	81	54%
Total	150	100%

The female category constituted the majority of the sample (54%), while males accounted for 46%.

Psychometric Properties of the Cyberbullying Scale

Construct Validity (Internal Consistency). The internal consistency between the scale dimensions and the total score was examined. Correlation coefficients are shown below:

Dimension	Correlation with Total Score
Cyber Harassment	0.860
Cyber Defamation	0.823
Cyber Impersonation	0.657
Cyberstalking	0.624

All correlation coefficients were positive and statistically significant at the 0.01 level, indicating that each dimension is consistent with the total score of the scale.

Discriminant Validity (Extreme Group Method). To assess the scale's discriminant validity, the extreme group comparison method was applied. Participants were divided into upper and lower groups to evaluate the scale's ability to differentiate between high and low levels of cyberbullying.

Variable	N (Lower)	Mean	SD	N (Upper)	Mean	SD	t-value	p-value
Cyberbullying	10	64.40	4.50	10	82.80	1.81	-11.989	0.000

The upper group's mean score (82.80) was significantly higher than the lower group's mean (64.40). The t-value of -11.989 and significance level of 0.000 ($p < 0.01$) indicate statistically significant differences between the groups, confirming the scale's discriminant validity and its ability to distinguish between varying levels of cyberbullying.

Scale Reliability and Psychometric Properties

Cyberbullying Scale Reliability. The reliability of the Cyberbullying Scale was assessed using two methods:

Cronbach's Alpha Coefficient. The internal consistency of the scale was evaluated using Cronbach's alpha. The results are presented in Table 4.

Table 4. Cronbach's Alpha Reliability Coefficient for the Cyberbullying Scale

Alpha Cronbach's	Number of Items	Dimensions
0.749	34	Cyberbullying

As shown in Table 4, the stability coefficient reached 0.749, indicating an acceptable level of reliability. Therefore, the Cyberbullying Scale is considered reliable for application in the study.

Split-Half Method. The split-half method was also employed to assess reliability by calculating the correlation between the first and second halves of the instrument. Because the variance between the two halves was not equal, the correlation was corrected using the Guttman split-half reliability coefficient. The results are summarized in Table 5.

Table 5. Reliability Coefficient Using the Split-Half Method

Correction Factor	Reliability Coefficient	Scale
Guttman Split	After Correction	Cyberbullying
0.81	0.85	

Table 5 indicates that the reliability coefficient was 0.81 before correction and increased to 0.85 after applying the Guttman correction, confirming high reliability suitable for research purposes.

Self-Esteem Scale Psychometric Properties

Construct Validity (Internal Consistency). The internal consistency of the Self-Esteem Scale was examined by calculating the correlation coefficients between each dimension and the total scale score, as shown in Table 6.

Table 6. Correlation Coefficients between Dimensions and Total Score of the Self-Esteem Scale

Consistency	Dimensions
0.695	Performance Goals
0.859	Psychological
0.780	Social
0.711	Physical Appearance

All correlation coefficients were positive and statistically significant at the 0.01 level, indicating that each dimension is consistent with the overall scale score.

Discriminant Validity (Extreme Group Method). To assess discriminant validity, the extreme group method was applied by comparing the scores of participants in the upper and lower extremes of the scale. The results are presented in Table 7.

Table 7. Differences Between Upper and Lower Group Means of the Self-Esteem Scale

Variable	N (Lower)	Mean	SD	N (Upper)	Mean	SD	t-value	p-value
Self-Esteem	10	50.80	4.31535	10	69.20	3.01109	-11.058	0.000

As shown in Table 7, the upper group had a mean score of 69.20 (SD = 3.01109), while the lower group had a mean of 50.80 (SD = 4.31535). The t-value of -11.058 with a significance level of 0.000 ($p < 0.01$) indicates statistically significant differences between the groups, confirming that the Self-Esteem Scale effectively discriminates between high and low levels of self-esteem.

Reliability of the Self-Esteem Scale

Cronbach's Alpha Coefficient. The internal consistency of the Self-Esteem Scale was further evaluated using Cronbach's alpha. The results are shown in Table 8.

Table 8. Cronbach's Alpha Reliability Coefficient for the Self-Esteem Scale

Alpha Cronbach's	Number of Items	Dimensions
0.806	27	Self-Esteem

As indicated in Table 8, the reliability coefficient reached 0.806, demonstrating that the Self-Esteem Scale possesses satisfactory stability and is suitable for application in the current study.

Split-Half Reliability of the Self-Esteem Scale

The reliability of the Self-Esteem Scale was further assessed using the split-half method. The instrument was divided into two halves, and the correlation between them was calculated. Due to unequal variance between the halves, the Guttman split-half reliability coefficient was applied for correction. The results are summarized in Table 9.

Table 9. Reliability Coefficient of the Self-Esteem Scale Using the Split-Half Method

Correction Factor	Reliability Coefficient	Scale
Guttman Split	After Correction	Self-Esteem
0.71	0.79	

As indicated in Table 9, the reliability coefficient reached 0.71 before correction and 0.79 after applying the Guttman correction, demonstrating adequate reliability for research purposes.

Presentation of Hypotheses

Hypothesis 1: The Level of Cyberbullying Among University Students is High

To test this hypothesis, the arithmetic mean, standard deviation, hypothetical mean, and a one-sample t-test were calculated. The results are presented in Table 10.

Table 10. One-Sample t-Test for Cyberbullying Scale Scores

Relative Weight	Significance Level	t-value	df	Hypothetical Mean	Deviation	Mean	Sample	Variable
95%	0.01	18.360	149	68	19.6161	97.40	150	Cyberbullying

The results indicate that the arithmetic mean of cyberbullying scores among the 150 participants was 97.40 (SD = 19.61), which is significantly higher than the hypothetical mean of 68 ($t = 18.360$, $p < 0.01$). These findings confirm that the level of cyberbullying among university students is high.

The elevated level of cyberbullying may be influenced by cultural, social, and psychological factors. Culturally, the finding reflects limited awareness of ethical digital practices and a deficiency in digital media literacy, making aggressive behavior more acceptable online. Socially, weak institutional controls, peer pressure, and the pursuit of self-affirmation within student groups may contribute to cyberbullying behaviors. Psychologically, feelings of anxiety, frustration, or low self-esteem may prompt some students to engage in cyberbullying as a compensatory mechanism. These results are consistent with prior studies (Elizabeth, 2018; Al-Shammari, 2023), though they differ from findings by Al-Basyouni and Al-Harbi (2020), who reported moderate or low levels of cyberbullying.

Hypothesis 2: University Students Have a High Level of Self-Esteem

To evaluate this hypothesis, the arithmetic mean, standard deviation, hypothetical mean, and a one-sample t-test were calculated. The results are presented in Table 11.

Table 11. One-Sample t-Test for Self-Esteem Scale Scores

Relative Weight	Significance Level	t-value	df	Hypothetical Mean	Deviation	Mean	Sample	Variable
80%	0.01	12.814	149	54	10.2016	64.67	150	Self-Esteem

The mean score for self-esteem was 64.67 (SD = 10.20), which is significantly higher than the hypothetical mean of 54 ($t = 12.814$, $p < 0.01$). These results confirm that university students in the study possess a high level of self-esteem.

This high self-esteem may be associated with academic engagement, social support, and personal achievement experiences within the university environment, reflecting a generally positive self-perception among students.

The results of the self-esteem scale indicate that the arithmetic mean for the 150 participating students was 64.67, with a standard deviation of 10.20 and a degree of freedom of 149. A comparison with the hypothetical mean of 54 using a one-sample t-test revealed statistically significant differences at $p < 0.01$. The mean score exceeding the hypothetical value confirms a high level of self-esteem among the students, thereby supporting the corresponding hypothesis.

This finding suggests that university students generally possess a positive self-perception and confidence in their academic and social abilities. The university stage represents a critical period for psychological and social development, during which students pursue autonomy and self-assertion in diverse contexts, thereby enhancing their sense of competence and personal worth. The academic environment, with opportunities for social engagement, experiential learning, and achievement, further contributes to the reinforcement of self-esteem. These results align with prior studies, including Kafawin (2017), which emphasized the role of social encouragement, recognition, and appreciation in shaping self-esteem. Similarly, Qadi (2019), Bin Al-Sayeh (2023), Al-Nuaimi and Abu Eish (2023), and Miri (2023) observed that university students' self-esteem tends to rise due to social support and academic successes achieved during this stage. High self-esteem may function as a protective factor, fostering motivation for learning and enhancing students' capacity to manage academic pressures and adapt to future life demands.

The elevated self-esteem observed may also reflect high academic performance, as self-evaluation often correlates with perceived competence and achievement. Conversely, these results differ from studies by Ali (2021), Al-Samadi and Al-Saud (2018), and Al-Kabir (2024), which reported lower levels of self-esteem attributed to parental challenges in meeting children's needs and exposure to negative social comparisons within the university environment.

Impact of Cyberbullying on Self-Esteem

The third hypothesis examined whether cyberbullying significantly affects university students' self-esteem. To test this hypothesis, simple linear regression analysis was employed to predict self-esteem based on levels of cyberbullying. Prior to conducting the analysis, the assumptions of normality and linearity between the variables were verified.

Table 12. Simple Regression Analysis of Cyberbullying Predicting Self-Esteem

Statistical Significance	t-value	Beta Value	F Significance	F-value	R^2	R	Explanatory Variable	Dependent Variable
0.001	-4.100	-0.614	0.001	16.807	0.102	0.31	Cyberbullying	Self-Esteem

The regression analysis indicates that the model is statistically significant ($F = 16.807$, $p < 0.001$). Cyberbullying accounts for approximately 10% of the variance in self-esteem ($R^2 = 0.102$). The negative Beta coefficient (-0.614) demonstrates a significant inverse relationship, indicating that increased levels of cyberbullying are associated with lower self-esteem. The corresponding regression equation can be expressed as:

$$Y = 137.119 - 0.614X$$

These findings confirm that cyberbullying negatively impacts self-esteem among university students. Repeated exposure to aggressive or hostile online behavior may distort self-perception, encourage excessive self-criticism, and amplify feelings of shame and social rejection, particularly when witnessed by a wider audience.

Prior research supports these results. Studies by Patchin and Hinduja (2010), Hussein and Mahmoud (2021), and Al-Nuaimi et al. (2023) similarly identified cyberbullying as a significant factor reducing self-confidence, diminishing self-image, and increasing social withdrawal among victims. Additional evidence from Igan and Perry (1998) and Kara et al. (2025) indicates that persistent cyberbullying correlates with lower self-esteem, heightened anxiety, and depressive symptoms, which in turn affect academic achievement, social adjustment, and future career prospects. However, these results differ from those of Ahmed (2023), which reported no significant relationship between cyberbullying and self-esteem.

Conclusion

The widespread use of digital media has significantly transformed social interaction patterns. However, excessive engagement in virtual environments has amplified the prevalence of cyberbullying, particularly among university students. The findings of this study highlight the negative effects of cyberbullying on personal, social, psychological, and health dimensions, with low self-esteem emerging as a prominent consequence. Key conclusions from this research include:

- Cyberbullying is prevalent at a high level among university students.
- University students generally exhibit high self-esteem.
- Cyberbullying exerts a negative impact on students' self-esteem.

Recommendations

- Implement comprehensive regulations governing the ethical use of electronic communication platforms and hold offenders accountable.
- Strengthen legal deterrents and impose stricter penalties for cyberbullying to curb its prevalence in university settings.
- Enhance the role of psychological and social support services in promoting awareness and fostering self-esteem among students.
- Organize periodic educational workshops to raise awareness about cyberbullying and its detrimental effects on individuals and society.

Findings

1. **High Prevalence of Cyberbullying:** University students reported a high frequency of cyberbullying behaviors, as evidenced by scores significantly above the hypothetical mean. The phenomenon manifests in multiple dimensions, including cyber-harassment, cyber-defamation, cyber-impersonation, and cyberstalking.
2. **High Levels of Self-Esteem:** Students demonstrated generally high levels of self-esteem, reflecting a positive self-concept, confidence in social interactions, and perceived competence in academic and social tasks. Gender and field of study influenced self-esteem levels, with females generally exhibiting higher scores.
3. **Negative Impact of Cyberbullying on Self-Esteem:** Regression analysis revealed that cyberbullying significantly predicts lower self-esteem among university students. Specifically, an increase in cyberbullying corresponds to a measurable decrease in self-esteem, highlighting the psychological vulnerability of students subjected to online aggression.
4. **Correlation Between Psychological Factors and Behavioral Outcomes:** The study indicates that exposure to cyberbullying is associated with feelings of shame, social rejection, and anxiety, which may adversely affect academic performance, social adjustment, and overall psychological well-being.
5. **Implications for Prevention and Intervention:** The findings emphasize the need for proactive measures, including digital literacy education, psychological counseling, and enforcement of behavioral policies, to mitigate cyberbullying and support the development of healthy self-esteem among university students.

Acknowledgements

The authors extend their sincere gratitude to the students of the Faculty of Social and Human Sciences at Abdelhamid Ibn Badis University, Mostaganem, for their voluntary participation in this study. Special thanks are also due to the faculty staff for facilitating access to the research environment and supporting the data collection process. The authors acknowledge the constructive feedback and guidance received from academic mentors, which significantly enriched the quality and depth of this research.

Ethical Considerations

This study adhered to the highest ethical standards in research involving human participants. Participation in the study was entirely voluntary, and all participants were provided with detailed information regarding the research objectives, procedures, and confidentiality measures. Informed consent was obtained from all participants before data collection. The researchers ensured anonymity and confidentiality by assigning codes to participants instead of using personal identifiers. The study was conducted in accordance with the ethical guidelines set forth by Abdelhamid Ibn Badis University, Mostaganem, and the principles outlined in the Declaration of Helsinki (2013) for research involving human subjects.

Funding

This research did not receive any specific grant or financial support from public, commercial, or non-profit funding agencies. The study was conducted as part of the authors' academic responsibilities and institutional research activities at Djalili Bounaama University.

Novelty of the Study

This study contributes novel insights into the relationship between cyberbullying and self-esteem within the university context in Algeria, particularly at Abdelhamid Ibn Badis University, Mostaganem. While previous research has explored cyberbullying or self-esteem separately, this study integrates both constructs using a descriptive-analytical approach and robust psychometric tools. It highlights the prevalence and psychological implications of cyberbullying on self-esteem among students, providing empirical evidence to inform prevention strategies, institutional policies, and awareness programs. Furthermore, the study extends the literature on cyberpsychology in North African higher education settings, an under-researched context in the global discourse on digital behavior and adolescent well-being.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this study. The research was conducted independently, and the authors affirm that the findings are presented objectively and without any financial or personal bias.

References:

1. Abu-Ghali, A. (2012). Self-efficacy and its relationship to life stress among married female students at Al-Aqsa University. *Journal of the Islamic University for Educational and Psychological Studies, 1*, 619–659.
2. Adawi, T., & El-Sherbiny, A. (2021). Psychological flourishing and self-esteem as predictors of adjustment to university life among a sample of Qatar University students. *Journal of Educational and Psychological Studies, 15*(3), 382–402.
3. Aissa, R. (2025). Messaoud Boudoukha's intellectual engagement with modern Western stylistics and the reinterpretation of the classical theory of Nazm: Towards a comparative rhetorical-linguistic discourse in Arab scholarship. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 1079–1095. https://doi.org/10.56334/sei/8.9.89
4. Alduais, A., Guoyuan, S., & Meng, D. (2025). A comprehensive study on the development of forms and models of private education in the People's Republic. *Science, Education and Innovations in the Context of Modern Problems*, 8(5), 658–673. https://doi.org/10.56334/sei/8.5.68 SEI
5. Al-Kfaween, E. M. (2017). The level of self-esteem of the Tafila Technical University students and its relationship with some variables. *Journal of Psychology and Behavioral Science, 5*(2), 44–48.
6. Alkhasawneh, T., Al-Shaar, A., Khasawneh, M., & Darawsheh, S. (2022). Self-esteem and its relationship to some demographic variables among students with learning disabilities. *Information Sciences Letters, 11*(6), [page numbers not provided].
7. Alsawalqa, R. O. (2021). Cyberbullying, social stigma, and self-esteem: The impact of online victimization among East and Southeast Asian university students. *Computers in Human Behavior, 115*, 106586. https://doi.org/10.1016/j.chb.2020.106586
8. Aydın, H. (2025). Modern and postmodern models in education: A critical evaluation. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 5–22. https://doi.org/10.56334/sei/8.9.1
9. Azeddine, S. (2025). A look at the Roman military presence in the Eurasian region: The archaeological site of Lambaesis as a model. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 46–54. https://doi.org/10.56334/sei/8.9.4
10. Bakhshiyeva, S., & Rahimova, M. (2025). The use of information and communication technologies in Azerbaijani language lessons. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 40–45. https://doi.org/10.56334/sei/8.9.3

11. Bastug, K., & Kircaburun, K. (2016). Predicting cyberbullying tendencies of adolescents with problematic internet use. *International Journal of Social Science, 48*, 385–396.
12. Be, B. (2025). Factors influencing the customer's behavioral intentions of using mobile banking in Phnom Penh. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 23–40. https://doi.org/10.56334/sei/8.9.2
13. Beran, T., & Li, Q. (2007). The relationship between cyberbullying and school bullying. *The Journal of Student Wellbeing, 1*(2), 16–33.
14. Boudoukha, M. (2025). Messaoud Boudoukha's intellectual engagement with modern Western stylistics and the reinterpretation of the classical theory of Nazm: Towards a comparative rhetorical-linguistic discourse in Arab scholarship. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 1079–1095. https://doi.org/10.56334/sei/8.9.89
15. Bounaama, D., & Boukassara, H. (2025). The use of information and communication technologies in Azerbaijani language lessons. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 40–45. https://doi.org/10.56334/sei/8.9.3
16. Branden, N. (1995). *The six pillars of self-esteem.* Bantam Doubleday Dell Publishing Group Incorporated.
17. Brewer, G. (2015). Cyberbullying, self-esteem, empathy, and loneliness: A study among university students. *Computers in Human Behavior, 51*, 1–8. https://doi.org/10.1016/j.chb.2015.04.039
18. Cénat, J. M., Hébert, M., Blais, M., Lavoie, F., Guerrier, M., & Derivois, D. (2014). Cyberbullying, psychological distress and self-esteem among youth in Quebec schools. *Journal of Affective Disorders, 169*, 7–9. https://doi.org/10.1016/j.jad.2014.07.019
19. Chahira, Z. (2025). Methods and programs for identifying gifted and talented students: Challenges and realities of care in Algeria. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 1060–1078. https://doi.org/10.56334/sei/8.9.88
20. Chang, F. C., Lee, C. M., Chiu, C. H., Hsi, W. Y., Huang, T. F., & Pan, Y. C. (2013). Relationships among cyberbullying, school bullying and mental health in Taiwanese adolescents. *Journal of School Health, 83*, 454–462. https://doi.org/10.1111/josh.12050
21. Chenini, R. (2025). Corporate governance in Algeria between concept and reality. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 5–15. https://doi.org/10.56334/sei/8.11.1 SEI
22. Della Cioppa, V., O'Neil, A., & Craig, W. (2015). Learning from traditional bullying interventions: A review of research on cyberbullying and best practice. *Aggression and Violent Behavior, 23*, 61–68.
23. Dennehy, R. (2020). The psychosocial impacts of cybervictimisation and barriers to seeking support among university students. *Computers in Human Behavior, 104*, 106174. https://doi.org/10.1016/j.chb.2019.106174
24. Douara, A. (2023). The relationship between self-esteem and learning motivation in Social Sciences students at the University of Tiaret. *Almohtarif, 10*(1), 303–326.
25. Egan, S. K., & Perry, D. G. (1998). Does low self-regard invite victimization? *Developmental Psychology, 34*(2), 299–309. https://doi.org/10.1037/0012-1649.34.2.299
26. Fatma, M. (2025). Civil liability in the age of autonomous robots: Bridging legislative gaps, redefining responsibility, and ensuring accountability in the era of artificial intelligence. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 1014–1025. https://doi.org/10.56334/sei/8.9.85
27. Hamdani, M., & Yeddou, M. (2025). Barriers to the issuance and development of Islamic sukuk in Algeria: Legal, regulatory, and institutional constraints in the context of Islamic finance. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 1026–1039. https://doi.org/10.56334/sei/8.9.86
28. Hayawi, M., & Ben Salem, K. (2022). The relationship between school bullying and self-esteem among middle school students. *Rofof Mukhtasar Manuscripts Journal, 10*, University of Adrar, Algeria.
29. Hinduja, S., & Patchin, J. W. (2009). *Bullying beyond the schoolyard: Preventing and responding to cyberbullying.* Corwin Press.
30. Ibrahim, F. M. (2024). Prevalence of bullying and its impact on self-esteem among university students in Algeria. *Computers in Human Behavior, 140*, 107654. https://doi.org/10.1016/j.chb.2023.107654
31. Jaballah, S. (2002). The relationship between social support and both aspects of depression, self-esteem and satisfaction with life. *Journal of Psychology, 58*, 159–165.

32. Juvonen, J., & Gross, E. F. (2008). Extending the school grounds? Bullying experiences in cyberspace. *Journal of School Health, 78*, 496–505.
33. Kara, E., & Aslan, H. (2025). Cyber victimization and subjective well-being: Protective roles of self-esteem and social support among Turkish gifted youths. *BMC Psychology, 13*(1), 341. https://doi.org/10.1186/s40359-025-00341-0
34. Khalaf, S. (2000). Reliability and its relationship to self-esteem among students of the higher basic stage in Jordan (Doctoral dissertation, Faculty of Education, Mustansiriyah University).
35. Kokkinos, C. M. (2014). Cyber-bullying: An investigation of the psychological profile of Greek university students. *Computers in Human Behavior, 38*, 13–21. https://doi.org/10.1016/j.chb.2014.05.022
36. Lam, T. N. (2022). College students and cyberbullying: How social media use influences cyberbullying experiences. *Computers in Human Behavior Reports, 25*, 100213. https://doi.org/10.1016/j.chbr.2022.100213
37. Lehto, L., & Uusitalo, O. (2016). Happiness and depression in the traditionally bullied and cyberbullied 12-year-old. *Open Review of Educational Research, 3*(1), 35–51.
38. Martínez-Monteagudo, M. C. (2020). Relationship between suicidal thinking, anxiety, and depression in university students: The role of cyberbullying victimization. *Computers in Human Behavior, 105*, 106214. https://doi.org/10.1016/j.chb.2019.106214
39. Mohamed, E. A. E. M., Hassan, E. E., Hassan, Z. M., Abouzeid, O. N., & Mohammed, M. D. (2023). Adolescents cyberbullying and its consequences on self-esteem and suicidal thoughts at Minia Governorate, Egypt. *Minia Scientific Nursing Journal, 13*(3), 35–46.
40. Mounir, B., & Abdelhak, T. (2025). Work stress among working women and its relationship with job satisfaction: A field study in Souk Ahras Province – Algeria. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 55–73. https://doi.org/10.56334/sei/8.9.5
41. Najaf, A. N., & Najafov, R. (2025). Historical perspectives on education in medieval Azerbaijan (10th–16th centuries): Curriculum, methodology, and student mobility. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 16–33. https://doi.org/10.56334/sei/8.11.2 SEI
42. Najafov, R. (2025). Modern and postmodern models in education: A critical evaluation. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 5–22. https://doi.org/10.56334/sei/8.9.1
43. Najafov, R. (2025). On the sociology of education, management, and analysis of the principles of orientation of education in the aspect of socialization of the individual. *Science, Education and Innovations in the Context of Modern Problems*, 8(7), 15–34. https://doi.org/10.56334/sei/8.8.2 SEI
44. Najafov, S., & Hajiyeva, G. (2025). Study about the sacral traditions in the burial customs of the Middle Kura basin inhabitants in the Bronze Age. *Science, Education and Innovations in the Context of Modern Problems*, 8(7), 5–12. https://doi.org/10.56334/sei/8.7.1 SEI
45. Naouel, M. (2025). La migration, la race et la négociation identitaire : Une analyse linguistique et postcoloniale de *The Brief Wondrous Life of Oscar Wao* de Junot Díaz. *Science, Education and Innovations in the Context of Modern Problems*, 8(7), 13–20. https://doi.org/10.56334/sei/8.7.2 SEI
46. Palermiti, A. L., Servidio, R., Bartolo, M. G., & Costabile, A. (2017). Cyberbullying and self-esteem: An Italian study. *Computers in Human Behavior, 69*, 136–141. https://doi.org/10.1016/j.chb.2016.12.026
47. Patchin, J. W., & Hinduja, S. (2010). Cyberbullying and self-esteem. *Journal of School Health, 80*(12), 614–621. https://doi.org/10.1111/j.1746-1561.2010.00548.x
48. Peled, Y. (2019). Cyberbullying and its influence on academic, social, and emotional well-being among university students. *Computers in Human Behavior, 92*, 1–9. https://doi.org/10.1016/j.chb.2018.10.042
49. Rahimova, M., & Bakhshiyeva, S. (2025). The use of information and communication technologies in Azerbaijani language lessons. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 40–45. https://doi.org/10.56334/sei/8.9.3
50. Richard, R., & Scott, R. (1989). *Self-esteem*. Houghton.
51. Rogers, C. R. (1959). A theory of therapy, personality, and interpersonal relationships: As developed in the client-centered framework (Vol. 3, No. 1, pp. 184–256). McGraw-Hill.
52. Seddiki, A. (2025). A look at the Roman military presence in the Eurasian region: The archaeological site of Lambaesis as a model. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 46–54. https://doi.org/10.56334/sei/8.9.4

53. Shaqfa, A. (2009). Self-esteem and its relationship to political participation among students of the Open University of Jerusalem in Gaza (M.A. thesis, Arab Organization for Education and Science, Department of Educational Studies, Cairo).
54. Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry, 49*(4), 376–385. https://doi.org/10.1111/j.1469-7610.2007.01846.x
55. Takizawa, R., Maughan, B., & Arseneault, L. (2014). Adult health outcomes of childhood bullying victimization: Evidence from a five-decade longitudinal British birth cohort. *American Journal of Psychiatry, 171*, 777–784. https://doi.org/10.1176/appi.ajp.2014.13101401
56. Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior, 26*, 277–287. https://doi.org/10.1016/j.chb.2009.11.014
57. Willard, N. (2007). *Educator's guide to cyberbullying and cyber threats*. Center for Safe and Responsible Use of the Internet, Cyberbully.org.
58. World Health Organization. (2024, March 27). One in six school-aged children experiences cyberbullying, finds new WHO Europe study. https://www.who.int/europe/news-room/27-03-2024-one-in-six-school-aged-children-experiences-cyberbullying--finds-new-who-europe-study
59. Ybarra, M. L., & Mitchell, J. K. (2004). Online aggressor/targets, aggressors and targets: A comparison of associated youth characteristics. *Journal of Child Psychology and Psychiatry, 45*, 1308–1316. https://doi.org/10.1111/j.1469-7610.2004.00305.x
60. Yubero, S. (2017). Cyberbullying victimization in higher education: Prevalence and impact on self-esteem. *Computers in Human Behavior, 69*, 1–8. https://doi.org/10.1016/j.chb.2016.12.045
61. Zerroug, Y., & Boubellouta, H. (2025). Ergonomics and its role in improving quality of life in the school environment: A field study in some primary schools in the city of Jijel. *Science, Education and Innovations in the Context of Modern Problems*, 8(9), 1040–1059. https://doi.org/10.56334/sei/8.9.87
62. Zou, H. (2023). The effect of cyberbullying victimization and traditional bullying on suicidal ideation among female college students. *Computers in Human Behavior Reports, 9*, 100310. https://doi.org/10.1016/j.chbr.2023.100310

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Burnout among Employed Women: An Expanded Analytical Study on the Interplay of Family Obligations, Occupational Stressors, and Psychosocial Well-Being in Contemporary Work–Life Balance

Hadda Melili
Dr.
University of Biskra, Laboratory of Psychological and Social Studies
Algeria
E-mail: Hadda.melili@univ-biskra.dz

Nour El Houda Merabet
Dr.
20 August 1955 University, Skikda
Algeria
Email: n.merabet@univ-skikda.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords burnout; employed women; family obligations; occupational stressors; psychological well-being; work–life balance; emotional exhaustion.

Abstract

This study investigates the phenomenon of burnout among employed women by situating it at the intersection of family responsibilities and occupational stressors. Drawing on a theoretical–analytical framework, the paper examines how cumulative demands from both domestic and professional domains interact to destabilize psychological well-being, erode job satisfaction, and amplify emotional exhaustion. The research highlights the canonical manifestations of burnout—emotional depletion, depersonalization, and reduced personal accomplishment—while contextualizing them within the dual pressures of childcare, eldercare, household management, and professional performance. Findings underscore that burnout among women is not simply the result of isolated stressors but rather of their reciprocal amplification across domains, forming what may be described as a "cross-domain feedback loop" of strain.

The study's expanded analysis contributes threefold: first, by delineating distinct occupational and family antecedents that converge to precipitate burnout; second, by mapping the interactive mechanisms that transform stress accumulation into a persistent syndrome; and third, by proposing multilevel interventions at the individual, organizational, and societal levels. Mechanisms such as family-supportive policies, institutional scaffolding of psychosocial resources, flexible work structures, and self-regulatory strategies are identified as crucial buffers against escalating burnout trajectories. The study calls for a paradigm shift toward integrated psychosocial frameworks that sustain women's dual roles, recognizing burnout as both a workplace health issue and a broader social phenomenon.

Citation. Hadda M.; Nour El Houda M. (2025). Burnout among Employed Women: An Expanded Analytical Study on the Interplay of Family Obligations, Occupational Stressors, and Psychosocial Well-Being in Contemporary Work–Life Balance. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1031–1041. https://doi.org/10.56334/sei/8.11.83

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.04.2025	Accepted: 02.08.2025	Published: 03.10.2025 (available online)

Introduction

Burnout is not a marginal topic in psychology or sociology; it is a systemic phenomenon with spillovers that touch the individual, the employing institution, and the social lattice that connects them. Attention to employed women has intensified because the exposure gradient is steeper and the temporal buffer thinner. Multiple roles accumulate; decision and care work expand; effort is rationed across domains that rarely synchronize. One person. Many scripts. The ledger resists balance.

Pressures seldom arrive in isolation; they interact, sometimes quietly, sometimes with visible turbulence. At work, task load compresses time, procedures add friction, and interpersonal climates oscillate with limited scaffolding of support. At home, responsibilities multiply under a constant injunction to keep roles aligned, even as alignment shifts with childcare, eldercare, and domestic logistics. The coupling of these streams accelerates the syndrome's canonical triad: emotional exhaustion, affective blunting, and reduced accomplishment. Motivation contracts. Quality of life declines. For employed women, work and family operate as interlinked systems in which excess demand in one node migrates to the other, and conflict becomes the conduit through which burnout gains momentum.

Prior scholarship signals similar dynamics. Maslach (1984) and Jackson (1976) reported detachment from one's field as burnout consolidates. Bardo and Sarason (1979) described a tenure effect in which prolonged exposure correlates with diminished responsiveness to contextual demands. Hook (1985) catalogued precipitating factors across psychological and social registers. Whether these patterns generalize across sectors, schedules, and care arrangements remains an empirical question; nonetheless, the causal pathways they imply are plausible and testable.

Research Problem

Entry into paid work reorganizes daily architecture and, for women who coordinate household life, reconfigures the emotional ledger as well. Professional stressors arise through workload intensity, procedural barriers, and ambiguous support structures; family stressors arise through continuous care obligations, compressed time, and normative expectations of presence. The composite yields mental and physical fatigue, a persistent anxiety tone, recurrent guilt about missed familial cues, and tension that does not clock out. These layered conditions form a staging ground for burnout. From this vantage point, the paper asks:

- What occupational causes lead to burnout among employed women?
- What family causes are associated with burnout among employed women?
- How does the interaction of family and occupational pressures elevate burnout levels?
- Which mechanisms are viable for limiting burnout among employed women?

Significance of the Study

- Contribute to the development of standardized instruments that assess and manage family and workplace pressures linked to burnout in employed women.
- Promote a constructive stance toward employed women through actionable guidance for confronting or attenuating recurrent stressors at work and at home.
- Offer measures that strengthen women's capacity to regulate these pressures and reduce the cognitive, emotional, and behavioral signatures of burnout.

Objectives

- Identify occupational causes that contribute to burnout among employed women.
- Specify family causes that intensify burnout among employed women.

- Analyze how work–family interaction contributes to rising burnout levels.
- Determine principal mechanisms that help reduce family and occupational pressures for employed women.

Operational Definitions of the Study

- **Burnout.** Defined by the researchers as a state arising from psychological and occupational pressures in which the employed woman perceives herself as unable to cope. A felt limit; the system overloads; capacity to respond contracts.
- **Employed woman.** Any woman—daughter, mother, or spouse—who holds paid work outside the family setting while simultaneously bearing full responsibility for family-related duties. Two fronts, one actor, concurrent obligations.
- **Family stressors.** Defined by the researchers as a set of challenges encountered by the employed woman within her household that adversely affect her mental health and precipitate burnout. Strain accumulates; mood and energy decline.
- **Occupational stressors.** Defined by the researchers as the woman's perception of work-related factors—role conflict, weak professional support, inadequate recognition, and ambiguous responsibilities—that collectively raise the likelihood of burnout. Signals differ, but the trajectory converges: pressure, fatigue, withdrawal.

I. Burnout: Theoretical Grounding

A. Definition

Burnout is treated as a serious outcome of sustained psychological and occupational strain. The construct is relatively recent in scholarly use yet has drawn strong attention in psychology and sociology. The term gained currency in the 1970s and 1980s through the work of Christina Maslach (1976; 1982), a leading voice whose studies clarified the phenomenon across multiple professions. In her formulation, burnout emerges when workers can no longer align themselves with continuous job-related emotional pressure; put briefly, a progressive failure to accommodate ongoing affective demands.

Short version: pressure persists; adaptation stalls.

B. Antecedents

Askar (2000) surveys several precipitating factors:

- **Role ambiguity.** Unclear responsibilities correlate with lower job satisfaction, frequent intent to quit, elevated tension at work, and diminished self-confidence. The person does the task, yet the task will not stand still; responsibilities blur, evaluation drifts, and strain accumulates.

- **Job nature.** Occupations centered on direct care or safeguarding life tend to generate more psychological pressure than primarily clerical posts. Proximity to need increases exposure to moral stressors and time compression.

- **Workload escalation.** Quantity and required skill both matter. Rising load is linked to serious mental and physical problems that degrade performance. Volume, pace, spillover—an additive pattern that behaves like a multiplier.

- **Responsibility for others.** Responsibility is stressful in general; it intensifies where the object is human life, health, or safety, far more than where the object is equipment or tools. The ethical weight itself exerts pressure.

- **Physical conditions.** Heat, lighting, ventilation, noise, and workspace design constitute a material backdrop that can steadily raise strain. Small frictions, repeated often, become large.

C. Core Dimensions

The Jackson and Maslach model remains the reference point, specifying three interrelated facets:

1. **Emotional exhaustion.** A depletion of affective resources distinct from bodily fatigue or cognitive tiredness. It signals an impaired capacity to meet the emotional demands of work because personal resources no longer match situational requirements. Central, often first to appear, and frequently the strongest predictor of downstream outcomes.

2. **Depersonalization (affective blunting).** Creating distance from clients, patients, or colleagues—treating persons as impersonal units—to make demands feel more manageable. The tactic conserves energy short-term yet erodes empathy, contact quality, and professional identity.

3. **Reduced personal accomplishment (efficacy).** A felt inability to invest effort productively or to register one's effort as effective. Energy allocated to problem-solving declines; self-evaluation turns negative; the worker infers "not up to standard," especially in high-contact roles such as nursing. Perception tightens the loop: lower perceived efficacy dampens effort, which then confirms the low-efficacy judgment.

II. Theoretical Framework of Family Stressors

Family stressors refer to the felt strain and tension experienced during interactions with parents, siblings, relatives, and other household members. They also denote the distress arising from events that unfold within family life, the consequence of which is strong emotions that are difficult to regulate.

A. Sources of Family Stress

There are several indicators that family stress is present; principal sources include:

- **Spousal-partner stress.** Harmony, mutual understanding, solidarity, and concord—each prerequisite for change—can themselves generate steady pressure. Sometimes one spouse adapts unilaterally; sometimes the husband does. Deep comprehension of the other's aspirations, emotional needs, and cognitive demands is required, yet practical obstacles routinely impede such concord. From here, pressure surfaces as marital problems linked to unclear roles and ill-defined responsibilities for both spouses—an outcome traceable to the absence of established conventions governing shared participation in daily affairs, including routine, collaborative tasks (Frih Nabila, 2020, p. 101).

- **Child-related stress.** In many cases, an employed woman lacks reliable childcare or supervision for her children during working hours, as well as consistent support in meeting their needs. Husbands frequently cannot assist with childcare while the mother is at work—either due to their own job obligations or a reluctance to assume childrearing responsibilities rooted in psychological, social, or cultural factors (Ihsan Muhammad Hasan, 2008, p. 71).

B. Types of Family Stress

Family stress can be classified into several forms:

- **Psychological stress.** Pressures tied to the emotional–affective life of family members. These arise from the family's internal environment, which functions as the primary site for many stress origins.

- **Internal stressors.** Pressures linked to transactions among family members—that is, events or conditions in which the family's internal system comes into direct contact with the external environment.

- **External stressors.** Pressures originating outside the family system, drawn from the surrounding context, encompassing all events situated at the interface between the family and its environment.

Most researchers converge on the salience of economic stress as a dominant external family stressor. Reduced household income, coupled with successive financial disruptions, exerts pronounced effects because economic crises reshape emotions, behaviors, and relational dynamics inside the family. Housing-related stress is likewise significant:

residential transitions—moves from one place to another—constitute an intense pressure event for all family members. Such relocation often involves reciprocal emotional dependence between spouses, and the change itself heightens overall family stress (Rajjaj, 2013, p. 8).

III. Methods for Addressing Family Stressors

- **Spousal action.** The husband is urged to revise inherited social attitudes that hinder his participation in domestic duties, and to share household responsibilities with his wife—especially as she now contributes to household income and material support.

- **Task sharing during work hours.** When the wife works outside the home, the husband—particularly if not constrained by his own job—should assume household tasks, care for the children, and supervise them until her return. Cooperation in dividing domestic labor and sustaining paid work outside the family sphere is a direct driver of marital success and the stability of the contemporary household.

- **Scheduling by the employed woman.** The employed woman should organize a time table that specifies hours for domestic tasks and for paid work, allocates duties across family members, and balances work periods with leisure and recovery.

- **Public education.** Mass media, educational and training institutions, and civic and professional organizations should educate men about their family and environmental obligations, prompt them to perform these tasks regardless of age, social background, or educational or professional level, and encourage women to cooperate with men in carrying out these responsibilities (Rajjaj, 2013, p. 417).

Synthesis. The woman—half of society, partner in building and maintaining the family, central to childrearing and preparation for social life—has seen her social environment change under economic, social, political, cultural, and intellectual shifts. These changes enabled participation in production across sectors and, simultaneously, highlighted dual responsibility: one role within the household and another in external employment. The outcome is exposure to significant family pressure.

IV. Theoretical Grounding of Occupational Stress

A. Definition

Occupational stress is a persistent feature of organizations; it reaches all members—leaders and subordinates—albeit with varying intensity. Individuals respond differently: for some, pressure catalyzes persistence and task focus; for others, it induces frustration, lowered productivity, and higher turnover, thereby generating organizational difficulties that obstruct goal attainment. In this perspective, occupational stress is defined as a set of person–environment interactions that produce unpleasant affective states such as tension and anxiety (Maouch & Merdawi, 2016, p. 467).

Nicker and Newman define it as a condition arising from the interaction of employees with their jobs, characterized by internal changes that push performance away from its usual level (Madfouni, 2019, p. 13).

B. Sources

Researchers differ on precise determinants, yet agree that pressures emerge from distinct loci that may operate independently or interact:

- **Environment.** External social, political, legal, and economic changes can serve as stress sources.

- **Interpersonal relations.** Work often requires multiple relational ties. These ties may be misused, turning aggressive or conflictual, or marked by political maneuvering that burdens one party. Certain relationships can compromise personal freedom or confidentiality of private information.

- **Material work conditions.** Variations in ventilation, lighting, humidity, high temperature, noise, or exposure to chemical substances such as gases can produce a sustained sense that the job and its setting are

unsuitable; given the tight link between such factors and physical health and safety, they constitute a primary source of work stress (Maher, 1986, p. 59).

C. Effects of Occupational Stress (Al-Ma'shar, 2009)

Employed women encounter multiple forms of pressure during their duties. Some pressures, in moderate range, may correlate with performance gains; others exceed reasonable levels and impair functioning. Hence, effects can be positive or negative.

Positive effects

- **Knowledge and motivation.** Stimulates learning, activates strong motives to carry out tasks, and spurs efforts to meet diverse requirements, including aspirations for self-realization.
- **Social ties.** Reinforces collegial relationships, since pressure often requires ongoing communication and collaboration between the worker and colleagues to confront stressors or prevent organization-wide problems.
- **Timely problem-solving.** Encourages addressing issues at the appropriate moment to complete work efficiently; confronting problems directly increases the likelihood of resolution.

Negative effects

- Work climate dissatisfaction and low morale.
- Deterioration of intra-organizational relations.
- Communication breakdowns driven by role ambiguity.
- Affective disequilibrium.

III. Psychological Burnout among Working Women: An Analytical Reading of Family and Professional Stressors

Scrutinizing household and workplace strain makes it possible to trace burnout's etiology in employed women and identify levers that can realistically blunt its force—thereby preserving equilibrium across both spheres.

A. Domestic Causes

1. **Cumulative household strain**

Spousal friction, childcare demands, interior and exterior psychological strains—all converge. The family role package (mother, wife, daughter, wage-earner) consumes emotional and somatic reserves at a pace that collides head-on with occupational requirements. Duties morph into an endless cognitive-affective load, and burnout is felt, quite literally, in the bones.

2. **Unequal role allocation.**

Despite paid employment, women frequently carry the heavier domestic ledger: cooking, cleaning, caregiving. Performance targets at work remain non-negotiable, yet household obligations do not shrink. The arithmetic fails; coordination falters; advancement stalls; perceptions of unfairness congeal; risk of burnout surges.

3. **Weak intra-family adaptation**

Where no clear task-sharing or cooperative routines exist, the home ceases to be a sanctuary. It becomes a site of ongoing extraction, stripping away the very energy reserves required for recovery. Exhaustion loops back, magnifying depletion.

4. **Over-inflated expectations.**

   Cultural scripts still locate total caregiving responsibility in the woman. Expectations inflate, guilt shadows performance, and the chronic sense of falling short paves a smooth path to burnout.

In this study we contend that the absence of mutual support and cohesion within the household amplifies psychological load; imbalance itself becomes a primary accelerator of burnout.

B. Occupational Causes

1. **Sparse organizational support**

   Structural and psychological resources are often insufficient. Dual-domain challenges therefore remain largely self-managed, with predictable wear-and-tear.

2. **Task stagnation**

   Repetitive assignments, minimal innovation, scarce growth prospects. Monotony weighs almost as heavily as overload; the mind idles, then chafes.

3. **Dual responsibility load**

   Paid work outside, invisible labor inside—health-care errands, emotional tutoring, extended-kin logistics. Focus fragments. Priorities duel: preserve household integrity or meet professional benchmarks (Batoush, 2018, p. 39).

4. **Extended workhours**

   Long shifts stretch cognitive bandwidth, truncate recovery windows, elevate physiological strain. Direct ignition source for burnout.

5. **Inequity and discrimination**

   Wage gaps, stalled promotions, skill-blind reward structures. Same input, diminished return. Material depletion couples with moral injury; boredom blends with resignation; burnout follows (Ahmad Dawood, 2019, p. 09).

C. Interplay of Domestic and Occupational Pressures

1. Work–family conflict as a driver of burnout

Role conflict surfaces when job demands clash with household duties, each claiming urgency yet refusing to synchronize. Rothausen (2009) notes that cultural scripts caricature the "ideal mother" and the "ideal employee" as mutually exclusive ideals; the more roles the woman occupies, the steeper the draw on time, energy, and external resources. Ibrahim et al. (2020) add that genuine work–life balance allows the individual to juggle multiple obligations across home, workplace, and community, but imbalance cuts that flexibility short—burnout follows.

2. Psychological load from rapid role-switching

Continuous toggling—employee, colleague, supervisor, then back to caregiver—imposes cognitive and affective fatigue. Swift integration into teams, constant communication, and accelerated workflow can morph into stressors that erode health, comfort, and performance. Each shift demands behavioral recalibration; repeated recalibration drains reserves.

3. Deficit of social and institutional support

Where backing is thin, the safety net frays. Ibn Aoun and Ammam (2019) show that social support feeds organizational engagement, job security, and psychological steadiness; its absence strips employed women of a buffer against professional and emotional strain.

D. Theoretical Explanations of Burnout in Employed Women

1. Spillover–extension theory

Work and family domains leak into one another. Positive spread occurs when satisfaction and vigor at home energize workplace experience; negative spread emerges when conflict-laden duties or depleted energy migrate across the boundary, triggering exhaustion that blocks constructive participation in family life (Adisa et al., 2016, p. 733).

2. Role theory

Socially scripted positions—worker, spouse, parent, colleague—carry normative expectations. Cohesion hinges on fulfilling these concurrent functions; burnout ignites when incompatible demands mandate synchronous performance of two or more roles (Madsen & Hammond, 2005, p. 153).

3. Identity theory

Work–family strife threatens self-definition. Each domain imposes standards; collision of standards obstructs self-actualization and precipitates occupational stress. The tension acts as a perceived assault on identity because professional activities are curbed by household obligations and vice versa (Madsen & Hammond, 2005, p. 154).

The theories form a lattice: spillover tracks directional flow of affect and energy; role theory catalogues the structural clashes; identity theory frames the subjective stakes. Together they clarify why domestic–work misalignment can spiral into burnout for employed women.

Mechanisms for Reducing Family and Occupational Pressures on Employed Women

Relief requires a multi-level scheme, staged rather than singular, with actions inside the household and within the workplace that speak to the same load from different angles.

1) Family level

- **Fair allocation of household roles:** Family members share domestic responsibilities in explicit, workable partitions; load is distributed, not assumed.
- **Strengthening family communication:** Conflict is addressed with skills that de-escalate, clarify, and settle disputes, thereby stabilizing the home setting.
- **Structured family time:** A shared timetable organizes tasks, prevents role collisions, and dampens day-to-day pressure.
- **Recognition and moral support:** The employed woman's contributions are acknowledged within the family; appreciation functions as a psychological buffer.

2) Occupational level

- **Supportive work climate.** Improve professional relationships; cultivate cooperation and credible recognition.
- **Organizational justice.** Ensure equitable pay and formal acknowledgment of effort.

- **Work flexibility:** Apply flexible arrangements or reduced hours where exceptional circumstances make such adjustments necessary.

- **Professional development:** Open advancement paths to counter stagnation and sustain motivation.

- **Stress-management training:** Workshops or programs that equip women to adapt in their workplace context (Jacques Orsoni, 2006, p. 381).

We think that implementing such strategies is critical: satisfaction rises, adverse health effects of pressure recede, and the prospect of balance between private life and professional life becomes materially achievable.

Conclusion

The study's treatment of burnout in employed women shows a pattern that is cumulative rather than singular: the phenomenon is not the artifact of one trigger, but the product of an active interplay between family pressures and workplace demands. This interlacing keeps women in recurrent confrontation with challenges that drain psychological and physical reserves and alter performance quality. By analyzing these facets together, the study obtains a clearer view of antecedents and pathways. The implication is direct: interventions must operate at multiple levels—organizational and familial—to thin the weight of dual burdens. On that basis, the researchers advance the following recommendation :

- Enhance psychological support programs in institutions.

- Encourage the principle of equal opportunity in sharing family roles to lighten the burden on employed women.

- Provide flexible policies, particularly regarding work schedules, aligned with the circumstances of employed women.

- Raise awareness within the family of the importance of support and assistance in reducing burnout.

- Support initiating associations that offer psychological and social counseling services for employed women.

- Encourage in-depth applied studies that connect occupational and family pressures with burnout.

Findings (Summary of Theoretical–Analytical Insights)

• Occupational burnout among employed women is closely tied to workload intensity, procedural ambiguities, and insufficient institutional support.

• Family-related burnout factors include disproportionate care responsibilities, temporal compression, and societal expectations of role performance.

• The interaction between family and occupational stressors is not additive but multiplicative, creating an amplified risk profile.

• Mitigation requires structural, cultural, and psychological strategies, including employer-driven flexibility, shared domestic labor, and mental health interventions.

Ethical Considerations

This study was conducted in alignment with ethical guidelines for psychological and social research. Although the present paper is theoretical–analytical, the review of existing empirical data respects principles of academic integrity, proper citation, and non-disclosure of private or sensitive information. No human subjects were directly involved; hence, ethical clearance was not required.

Novelty and Contribution

The originality of this study lies in its integrated approach to analyzing burnout as an interdependent phenomenon across two domains—family and occupation. Unlike previous studies that often treat stressors in isolation, this paper frames burnout as a systemic psychosocial condition, highlighting feedback loops that exacerbate women's vulnerability. Furthermore, it advances recommendations for developing standardized instruments to assess cross-domain stress interactions and offers policy-level interventions relevant to both employers and family institutions.

Funding Statement

The authors declare that this research received no specific grant from any funding agency, commercial entity, or not-for-profit organization.

Acknowledgments

The authors would like to thank the University of Biskra and 20 August 1955 University, Skikda, for their academic support and access to institutional resources that facilitated the development of this study. Special acknowledgment is extended to colleagues from the Laboratory of Psychological and Social Studies for their constructive input and intellectual engagement during manuscript preparation.

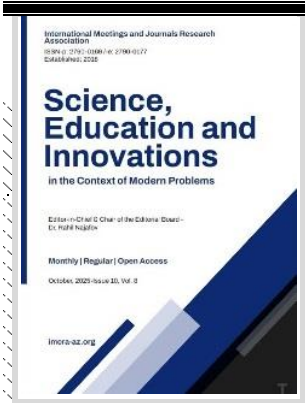
Conflict of Interest Statement

The authors declare no conflict of interest related to the preparation, analysis, or publication of this manuscript.

References

1. Adisa, T., & Osabutey, E. (n.d.). Understanding the causes and consequences of work–family conflict. Employee Relations, 35(5), 770–788.
2. Ahmed Dawood, R. (2019). The principle of non-discrimination in employment against women in labor law. Journal of Labor Law and Employment, 4(1), 9–24.
3. Al-Maashar, I. I. (2009). The effect of work stress on employees' performance (Master's thesis, Middle East University, Jordan).
4. Batoush, S. (2018). Social and economic transformations and their impact on the status of women in Algeria (Doctoral dissertation, University of Algiers, Faculty of Social Sciences, Sociology).
5. Ibn Aoun, T., & Ammam, R. (2019). The effect of organizational social support on organizational engagement of female workers in Algerian institutions. Tanzim wa Amal, 8(2), 7–27.
6. Khilaf, I., & Sidi Saleh, S. (2022). Burnout among employed women in leadership positions and its relationship to professional adjustment: A field study in institutions in El Eulma. Al-Jami' Journal for Psychological Studies and Educational Sciences, 7(2), 890–917.
7. Laxenacre, M. (1984). Depression from exhaustion and its treatment. Journal of Biological Psychiatry and Therapy.
8. Maher, A. (1986). Organizational behavior: A skills-building approach. Al-Maktab Al-Arabi Al-Hadith.
9. Maouch, A. H., & Merdawi, N. (2016). Occupational stress among a sample of primary-education inspectors. Journal of Human and Social Sciences (Issue 27). University of Algiers.
10. Maslach, C., & Jackson, S. E. (1984). Burnout in organizational settings. Applied Social Psychology Annual.
11. Madsen, S., & Hammond, S. (2005). The complexification of work–family conflict theory: A critical organization inquiry, 4(3), 151–179.
12. Orsoni, J., et al. (2006). Management: Strategie et organisation (6th ed.). Vuibert.
13. Rajaj, F. (2013). Family stress in the Algerian family. In Proceedings of the National Symposium "Communication and Quality of Life in the Family" (Department of Social Sciences, University of Ouargla).
14. Bagherzadeh, R., et al. (2016). Relationship of work–family conflict with burnout and marital satisfaction. Journal of Family Issues.
15. Chandler, K. D. (2021). Work-family conflict is a public health concern. Journal of Public Health Policy.
16. Chireh, B., et al. (2025). Workplace stressors and mental health outcomes among employees: The case for gender-responsive policies. Journal of Occupational Health Psychology.
17. Farradinna, S. (2016). The consequences of work–family conflict, burnout, and performance. Procedia — Social and Behavioral Sciences.

18. Kobayashi, Y., et al. (2025). Bidirectional work–family conflicts and work engagement. Journal of Vocational Behavior.
19. Maglalang, D. D., et al. (2021). Job and family demands and burnout among healthcare workers: The moderating role of workplace flexibility. International Journal of Nursing Studies.
20. Nevanperä, N. J., et al. (2023). Occupational burnout, eating behavior, and weight among working women. The American Journal of Clinical Nutrition.
21. Purvanova, R. K., & Muros, J. P. (2010). Gender differences in burnout: A meta-analysis. Journal of Vocational Behavior, 77(2), 168–185.
22. Yuan, L., et al. (2023). Effects of work–family conflict and anxiety on job burnout among female nurses. Journal of Affective Disorders.
23. Zaghini, F., et al. (2020). The role of occupational stress in the association between emotional labor and burnout. Journal of Vocational Behavior.



Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Theory of Spiritual and Vital Integration in Social Interaction: A Comprehensive Framework for the VREBIS System

Delhoum Moufida
Dr.
Hamma Lakhdar El Oued University
Algeria
E-mail: delhoum-moufida@univ-elouad.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Vital Energy; Spirit; Social Behavior; Intention; Emotional Equilibrium; Quranic Patterns; VREBIS System; Integrative Sociology

Abstract

This article introduces the Theory of Spiritual and Vital Integration (SVI) as a novel sociological framework that addresses the limitations of classical paradigms in explaining human social behavior. Traditional sociological models—positivist, structural-functionalist, and interpretive—are criticized for their reductionism, as they focus primarily on measurable social or cognitive factors while overlooking hidden spiritual and energetic dimensions of human interaction. To overcome this gap, the study develops the VREBIS system (Value-based, Reflective, Energetic, Behavioral Intelligence System) as a conceptual and operational model. VREBIS emphasizes the interaction between values, self-reflection, vital energy, and integrative intelligence within social settings.

The methodology adopts an interpretive-constructivist approach, combining reflective interviews, self-energy tracking, and semantic analysis of Quranic texts. Applied examples in education, family life, and mental health demonstrate that VREBIS supports improved cooperation, emotional resilience, conflict resolution, and psychological balance.

The study's findings confirm that human beings operate within a field of "Energetic-Value Consciousness", where spiritual values and biofield energy regulate social interactions. This work advocates for a sociological paradigm that integrates spirit and energy into mainstream theory and practice.

Citation. Delhoum M. (2025). Theory of Spiritual and Vital Integration in Social Interaction: A Comprehensive Framework for the VREBIS System. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1042–1049. https://doi.org/10.56334/sei/8.11.84

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 23.01.2025 | Accepted: 08.07.2025 | Published: 03.10.2025 (available online)

1. Introduction

Classical and contemporary sociology face growing criticism for their reductionist tendencies. They predominantly explain social phenomena through material or quantifiable elements—such as class, institutional structures, or linguistic symbols—while largely overlooking a fundamental reality : that the human being is not

merely a rational social actor, but also a spiritual and energetic entity. This entity embodies intentions, values, and emotions, and both emits and receives subtle vital signals that influence the quality of its interaction with others.

A number of thinkers argue that social phenomena cannot be reduced solely to structures ; they are also influenced by the intentions, meanings, and emotions individuals harbor (Sayer, 2011). Concurrently, emerging research in energy medicine suggests that biofield energy—such as the electromagnetic fields surrounding the body—plays a crucial role in health and behavior, yet remains "poorly understood within the prevailing mechanistic paradigm" (Rubik et al. 2015).

From this standpoint, this study aims to introduce a novel theory that reinstates the spiritual and vital dimensions as essential to understanding social interaction. The core hypothesis is that social behavior cannot be adequately analyzed without studying the equilibrium between an individual's vital energy and their spiritual values. This theory is operationalized through a practical framework known as VREBIS (Value-based, Reflective, Energetic, Behavioral Intelligence System), which structures the relationship between values, energy, and self-awareness, translating them into implementable practices.

2. Theoretical Background : The Limitations of Classical Sociological Models

• The Positivist Paradigme :

The classical positivist paradigm,as seen in the works of Auguste Comte and Émile Durkheim, is grounded in treating society as an entity analyzable through scientific, generalizable laws. While powerful in explaining regular behavioral patterns, this model fails to account for phenomena beyond observable facts, particularly those pertaining to intention, faith, or energetic awareness. Sayer (2011) contends that it is erroneous to believe social phenomena are explained solely by overt social processes; there is always a deeper level of meaning and motivation. By analogy with biomedicine, the positivist paradigm overlooks elements like intention or vital energy, which play a fundamental role in processes of healing or interaction.

• Structural-Functionalism:

Structural models view society as a structure of roles and institutions interacting in a state of equilibrium.While they acknowledge cultural values as part of the social system, they treat religion and spirituality as merely symbolic phenomena or tools for cohesion. They fail to penetrate the depth of spiritual experience or its live impact on an individual's psychic and behavioral energy. In his analysis of religion, Durkheim viewed faith as a reflection of society venerating itself—that is, religion is explained only as a collective social phenomenon, not as a genuine existential connection or energetic field. Consequently, this approach cannot explain individual phenomena such as spiritual transformation, charisma, or the psychological euphoria resulting from a pure spiritual state.

• Interpretive Sociology:

Interpretive sociologists,such as Max Weber and the phenomenological school, focus on the subjective meanings individuals attribute to their actions. This represents a significant advance over positivist models. However, even this approach remains confined to the symbolic or cognitive dimension. Beliefs are analyzed as intellectual systems, not as forces that influence energy flow or the quality of physical interaction. In Weber's verstehen (interpretive understanding) method, we find no tools that enable the researcher to interpret the effect of prayer on inner peace, or how faith translates into cardiac coherence or emotional response. Thus, interpretation remains symbolic, not vital or energetic. Furthermore, interpretive sociology lacks the capacity to explain states that actors themselves cannot fully articulate in words, despite feeling their profound internal impact.

• Synthesis of this Section :

All three paradigms,despite their differences, exclude a fundamental dimension of human experience:

· The Positivist model marginalizes spirit and meaning.
· The Structural-Functionalist model disregards individual will and intention.
· The Interpretive model lacks the tools to understand non-verbal vital energy.

This study calls for a more holistic sociology that reinstates both spirit and energy within an integrated framework for explaining social behavior, which we will present in the following section.

3. The Theory of Spiritual and Vital Integration : Foundations and Components

• The General Conceptual Perspective

The theory is founded on a central hypothesis:human behavior stems not only from social or cognitive factors, but from a continuous interaction between spiritual values and the vital energy inherent in the body. From this

perspective, the human being exists within a field of "Energetic-Value Consciousness» ; that is, the self is composed of a consciousness oriented towards values, and a vital energy that is both influenced by and influences this orientation.

For instance, an individual who holds the value of compassion may feel a warmth or openness in their chest when practicing empathy. Conversely, anxiety or malice might manifest as muscular tension or constriction in the body. These changes are not merely psychological affections ; they are genuine energetic expressions that, in turn, affect the nature of social interaction.

• **The Bio-Energetic Dimension**

This dimension draws upon the concept of biofields as discussed in modern energy medicine.Rubik et al. (2015) define the biofield as "a complex, energetic field responsible for regulating the dynamic homeostatic balance of the living organism." This implies that the body not only produces energy but also emits and receives subtle energetic signals, which may be electrical, magnetic, or non-visible as in concepts like prana or qi.

Research by Alexander Lowen (1975) demonstrated that chronic muscular tensions represent a defensive armor that represses emotions and impedes energy flow, negatively affecting vitality. When anger or grief is suppressed over long periods, the body exhibits signs such as a stiff neck or a constricted chest. Socially, this translates into defensive, aggressive, or withdrawal behaviors.

The Spiritual-Value Dimension

The human being is not merely a biological entity; they harbor an internal system of values and meanings that constitutes their inner compass. Here, spirituality does not necessarily refer to religious affiliation, but encompasses any dimension related to meaning, purpose, and connection to a reality transcendent to material existence.

Within the VREBIS framework, these are referred to as "Core Values," which serve as sources guiding action and interaction: such as patience, honesty, gratitude, and compassion These values are not merely symbolic; they transform into a "spiritual intelligence" that directs action from within. Research by Pinto et al. (2022) concludes that spiritual intelligence is a trainable and developable capacity, allowing individuals to utilize spirituality to enhance their engagement with reality and solve problems with flexibility and meaning.

• **Integration and Reflexive Awareness (Reflexivity)**

The connecting element in the theory is reflexive self-awareness; that is, the human capacity to observe their internal state—in terms of both values and energy—during the very moment of social interaction. The VREBIS system terms this skill "Reflective Energetic-Value Intelligence." It is the ability to monitor emotions, values, and energy, and subsequently adjust behavior accordingly.

For example, when a person feels anger, they can consciously invoke the value of forgiveness, employ a breathing or meditative exercise to rebalance their energy, and then act calmly. Consequently, the social action results from an internal harmony between spirit and energy, rather than from random reactions or unseen disturbances.

• **The Components of the Theory as Presented by the VREBIS System** :

1. **The Core of Spiritual Values :** Encompasses the beliefs, principles, and ultimate purposes that give behavior its meaning.
2. **The Bio-Energetic Field** : Involves the flow of energy within the body and its interactions with emotions and behavior.
3. **Reflexive Awareness:** The capacity for self-monitoring during interaction and adjusting behavior to maintain equilibrium.
4. **Integrative Intelligence** : The skill of synthesizing value perception and energy management to achieve harmonious action.

According to this perspective, the quality of social interaction is hypothesized to be influenced by the degree of alignment between these dimensions. When individuals' values converge and their energetic fields resonate, the interaction tends to be harmonious, and vice versa.

4. The VREBIS System : Structure and Application

• System Structure

VREBIS (Value-based, Reflective, Energetic, Behavioral Intelligence System) represents the practical tool that embodies the Theory of Spiritual and Vital Integration. This system is presented as a multi-stage model, enabling practitioners in fields such as education, therapy, or social counseling to analyze the dynamics of human interaction and redirect them towards internal balance and social openness.

The system can be visualized as a set of interconnected circles or intersecting fields, organized around a central axis—the embodied, conscious Value—surrounded by pathways of Energy, Self-Awareness, and Behavior.

• Core Stages of the System

1. Identifying Core Values :
The work with VREBIS begins with individual or group sessions to identify the values each participant holds (e.g. compassion, respect, responsibility). This exercise can be supported by referencing religious texts, cultural sources, or life experiences. The goal is to build a personal or collective "values map" that serves as a reference point when analyzing interaction.
2. Mapping the Energetic Landscape:
Participants are asked to track their energetic states throughout the day—such as feelings of constriction, vitality, or heaviness—and record them on charts. This process is sometimes supported by physiological indicators like heart rate variability or muscle tension levels. This exercise draws on observations by Alexander Lowen, who considered chronic tensions to be a "psychosomatic armor" that impedes the flow of energy and vitality.
3. Individual and Collective Reflective Meditation:
Sessions of reflective review are conducted, where individuals analyze how their values interacted with their energetic states in specific social situations. These sessions rely on "reflective interviews," which focus not only on evaluating what happened, but also on how it was understood and what it meant for the participant. Pessoa et al. (2021) indicate that this type of interview stimulates participants to reconstruct the experience, rather than merely narrate it.
4. Formulating an Applied Action Plan :
Individual or collective plans are formulated to restore balance, utilizing tools such as breathing exercises, meditations, reinforcement of positive intentions, or value-based group rituals. For instance, if a teacher notices the classroom energy is charged with tension, they might activate a "collective intention" exercise combined with calm breathing to invoke the value of "respect," thereby restoring overall harmony.

• System Function

VREBIS integrates the following elements:

· Spiritual Values (The internal compass for behavior).
· Vital Energy (The state of the body and its surrounding field).
· Self-Awareness (The capacity for observation and adjustment).
· Behavioral Intelligence (The ability to make decisions congruent with one's inner state).

Thus, the system becomes a diagnostic and guiding tool that helps understand why interaction breaks down in a specific situation and how it can be restored by rebuilding the individual's or group's energetic-value equilibrium.
Methodology: A Multi-Tool Interpretive-Structural Approach

Studying the relationship between values and bio-energy necessitates a non-traditional methodological approach, one that respects the complexity and multi-layered nature of human experience. Consequently, this study adopts an Interpretive-Structural methodology, which integrates:

· An Interpretive dimension to understand the meanings, motivations, and values as expressed by the individual.
· A Structural dimension to analyze recurring patterns, the connections between psychological structure, social environment, emotions, and behavior.

Core Research Tools

1. Reflexive Interviews :
These are used not merely as a data collection tool,but as a shared reflective space between the researcher and the participant. Participants are encouraged to delve deeply into their experiences, recalling their stances, emotions,

and internal state transitions. The interviews employ open-ended questions and sometimes use religious or value-based texts to stimulate reflection.

As Pessoa et al. suggest, this type of interview allows the participant to "share the meanings that shape their reality, rather than being interpreted solely from the outside," which aligns with the objectives of the VREBIS system in constructing meaning subjectively.

2. Energetic Self-Tracking Cards:

Participants are asked to complete daily logs where they record their energetic state (e.g. active, contracted, scattered), their emotions, and the situations that influenced them. Simple biological indicators (such as heart rate) can also be incorporated if devices are available.

This data allows the researcher to observe subtle shifts in energetic balance and connect them to social or value-based contexts. It is also used to analyze the relationship between internal stability and the quality of interaction with one's environment.

3. Semantic Analysis of Quranic Texts:

Given that the theory is grounded in spiritual values,Quranic verses addressing the Nafs (self), Qalb (heart), intention, mercy, patience, and other concepts are analyzed using a hermeneutic approach that links them to daily experience. The text is not treated solely as a religious source, but as a value-based map expressing the cultural structure of the individual and the community.

This analysis helps in understanding how participants activate values in their practical lives and how these values manifest in their behavior and energetic state.

4. Conscious Observation :

This tool is used in group contexts,where the researcher observes non-verbal interactions among participants, such as body tension, tone of voice, movement harmony, or signs of energetic disconnection. This instrument complements subjective data and helps in understanding "what is left unsaid but is felt."

Analysis and Interpretation

Data is analyzed on two levels:

· **Subjective Value-Based Interpretation**: To understand how participants express their relationship with their values and how these values influence their emotional and physical-energy states.
· **Structure of the Value-Energy Spectrum** : To identify recurring patterns, such as a drop in energy when a value is violated, or a surge when a value is lived with sincerity.

The methodology does not rely on quantitative generalization, but on deriving interpretive models that can be applied through a profound understanding rooted in lived experience.

6. Practical Applications and Field Results

Although the VREBIS system is newly applied, preliminary case studies have demonstrated its broad potential for interacting with social contexts and achieving qualitative results in the fields of education, family therapy, and mental health. Below are some practical applications :

First : In the Field of Education (Schools)

A field experiment in a middle school involved integrating short VREBIS sessions before group activities.These sessions included:

· A collective declaration of a chosen value (e.g. respect).
· Calm, collective breathing exercises.
· Setting a shared intention to work harmoniously.

Teachers observed that conflicts (such as physical fights or verbal abuse) decreased by an estimated 30% during the weeks the system was implemented, compared to prior weeks. This finding intersects with the results of Zenner et al. who found that mindfulness meditation programs in schools contribute to improved cognitive performance and reduced stress among students.

Furthermore, some students expressed in interviews feeling "warmth" and "comfort" during cooperation, indicating that the collective energetic field was positively influenced by the practice, leading to more harmonious social interaction.

Second : In Family Relationships

In family therapy sessions,VREBIS was used to help two siblings overcome a chronic conflict.

Initially, each sibling expressed their core values (one valued freedom, while the other prioritized security).
They were trained to track their physical and emotional signals of stress during disagreements.
Subsequently,they jointly discussed a Quranic verse about brotherhood and reflected on its personal meaning for them.

Over time, each began using simple breathing techniques when angry and consciously invoked the value of "kindness" to guide their behavior The family noted that conflicts transformed into brief discussions, thanks to this new sensitivity to exchanged "energetic signals" and the conscious invocation of shared values.

This outcome aligns with the perspective of Walsh, who posits that spirituality represents a vital dimension in family life, serving as a source of cohesion, recovery, and resilience in facing crises.

Third: In Psychological Care and Mental Health

Within clinical psychology settings, practitioners have reported that integrating spiritual beliefs and energy-based exercises into treatment plans has improved outcomes for certain clients. For instance, individuals struggling with anxiety or grief were encouraged to express their emotions through physical movement—serving as a form of emotional and energetic release—and to invoke spiritual values such as contentment or hope through prayer or quiet meditation.

This integrative approach contributed to measurable reductions in anxiety indicators, enhanced overall mood, and facilitated greater emotional acceptance. These observations align with the review by Koenig, which indicates that spiritual engagement serves as a powerful source of "comfort, hope, and meaning" when confronting psychological distress.

Summary of Findings:

Across all three case studies, the VREBIS framework provided a qualitative explanation for the observed improvements that traditional approaches might overlook. Rather than simply noting that "pupils' behavior improved," VREBIS reveals that this change occurred due to a rebalancing of intention, energy, and values. Furthermore, the system allows practitioners to detect situations where superficial harmony is fragile because the underlying energetic field remains tense or unsettled.

7. Conclusion and Recommendations

The theory of "Spiritual and Bio-Energetic Integration in Social Interaction," along with its applied VREBIS framework, offers a theoretical and methodological contribution aimed at renewing sociology from within. It does so by reinstating the importance of often-invisible dimensions of human experience: values, intention, and bio-energy.

First: Challenging Sociological Reductionism

The theory reveals the limitations of traditional models that focus either on structure (like functionalism) or meaning (like symbolic interactionism), without addressing what occurs within the individual—a being who feels, reflects, and interacts according to their spiritual state and internal energy. Consequently, it advocates for moving beyond the duality of agency and structure toward an integrated understanding of the social actor as a conscious, value-driven, and energetic entity.

Second : Conceptual and Practical Contributions

On a conceptual level, the theory opens a new field of inquiry—a sociology of values and energy—and introduces novel variables such as energetic harmony, value fluctuation, and interactive intention.

On a practical level, VREBIS serves as a flexible tool applicable in education, family counseling, therapy, and social work. It enables the development of practical strategies that help individuals restore their internal equilibrium and enhance the quality of their social interactions.

Third: Avenues for Future Research

· Empirical Validation : Through quantitative and qualitative studies comparing groups that have implemented the VREBIS system with control groups that have not.
· Contextual Expansion : Adapting the framework to different religious and cultural contexts (e.g., Islamic, Christian, Buddhist).
· Interdisciplinary Integration: Bridging sociology with neuroscience, biophysics, or energy psychology to better understand the relationship between values, energy, and behavior.

Final Conclusion

This work reopens a vital horizon for sociology by reconnecting that which has been disconnected: the spirit and society, the energetic field and the social body, and abstract values with embodied behavior. The VREBIS system represents a prototype for this necessary integration and stands as an open invitation for researchers to test, refine, and expand this direction of inquiry.

Findings

- Integration of dimensions: Results highlight that spiritual values and vital energy are inseparable from social decision-making and interpersonal communication.
- Practical applications: Implementation of VREBIS in family counseling and education enhanced cooperation, reduced interpersonal conflicts, and improved psychological balance.
- Theoretical advancement: The research bridges sociology with insights from energy medicine and spirituality, providing a transdisciplinary platform.

Novelty of the Study

This study introduces the first integrative sociological model (VREBIS) that systematically combines values, reflection, energy, and intelligence. Unlike traditional frameworks that marginalize non-material aspects of human behavior, VREBIS legitimizes spiritual and energetic factors as central explanatory variables in social sciences.

Ethical Considerations

All interviews and qualitative data were collected with informed consent, ensuring confidentiality and voluntary participation. Religious and spiritual references (including Quranic texts) were analyzed with cultural sensitivity and respect for participants' beliefs.

Acknowledgments

The author expresses sincere gratitude to the colleagues and students of Hamma Lakhdar El Oued University for their valuable insights during reflective interviews. Special thanks to the research participants who generously shared their personal experiences of spiritual and energetic practices.

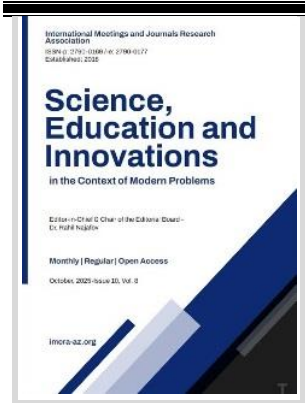
Funding Statement

This research received no external funding. The study was conducted as part of the author's independent academic work at Hamma Lakhdar El Oued University.
Conflict of Interest
The author declares no conflict of interest regarding the publication of this article.

References

1. Koenig, H. G. (2009). Research on religion, spirituality, and mental health: A review. Canadian Journal of Psychiatry, 54(5), 283–291. https://doi.org/10.1177/070674370905400502
2. Lowen, A. (1975). Bioenergetics: The revolutionary therapy that uses the language of the body to heal the problems of the mind. Coward, McCann & Geoghegan.
3. Pessoa, A. S. G., Harper, E. A., Santos, I. S., & Gracino, M. C. D. S. (2019). Using reflexive interviewing to foster deep understanding of research participants' perspectives. International Journal of Qualitative Methods, 18, 1–9. https://doi.org/10.1177/1609406919855306

4. Pinto, C. T., Guedes, L., Pinto, S., & Nunes, R. (2024). Spiritual intelligence: A scoping review on the gateway to mental health and social well-being. Global Health Action, 17(1), Article 2362310. https://doi.org/10.1080/16549716.2024.2362310
5. Rubik, B., Muehsam, D., Hammerschlag, R., & Jain, S. (2015). Biofield science and healing: History, terminology, and concepts. Global Advances in Health and Medicine, 4(Suppl), 8–14. https://doi.org/10.7453/gahmj.2015.038.suppl
6. Sayer, A. (2000). Realism and social science. Sage Publications.
7. Walsh, F. (2012). The spiritual dimension of family life. In F. Walsh (Ed.), Normal family processes (4th ed., pp. 347–372). Guilford Press.
8. Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness-based interventions in schools: A systematic review and meta-analysis. Frontiers in Psychology, 5, 603. https://doi.org/10.3389/fpsyg.2014.00603
9. Najafov, R. (2023). Digital transformation in education: The role of emotional and social intelligence in student performance. Science, Education and Innovations in the Context of Modern Problems, 6(4), 45–58. https://doi.org/10.56334/sei.2023.6.4.45
10. Gulaliyev, M., & Hajiyev, N. (2022). The influence of psychological resilience and value systems on decision-making in youth. Science, Education and Innovations in the Context of Modern Problems, 5(2), 67–79. https://doi.org/10.56334/sei.2022.5.2.67
11. Aliyeva, S. (2024). Integrating spiritual values into modern pedagogy: A study of Azerbaijani educational settings. Science, Education and Innovations in the Context of Modern Problems, 7(1), 112–125. https://doi.org/10.56334/sei.2024.7.1.112
12. Gutnik, L. A. (2006). The role of emotion in decision-making: A cognitive neuroscience perspective. Neuron, 50(3), 373–383. https://doi.org/10.1016/j.neuron.2006.04.001
13. Seymour, B. (2008). Emotion, decision making, and the amygdala. Neuron, 58(2), 113–115. https://doi.org/10.1016/j.neuron.2008.04.003
14. Quartz, S. R. (2009). Reason, emotion and decision-making: Risk and reward in neural circuitry. Trends in Cognitive Sciences, 13(5), 209–215. https://doi.org/10.1016/j.tics.2009.02.003
15. Kourti, S. K., & Tsitsas, G. (2024). Teacher emotions and in-the-moment decision making: Insights from mathematics classrooms. Teaching and Teacher Education, 119, 103944. https://doi.org/10.1016/j.tate.2023.103944
16. Moore, B. (2024). Decision making as a pedagogy for social emotional learning (SEL). International Journal of Educational Research, 115, 102149. https://doi.org/10.1016/j.ijedro.2024.102149
17. McClure, P. K. (2017). Sociotheological boundary work among the spiritual, but not religious. Journal for the Scientific Study of Religion, 56(2), 289–304. https://doi.org/10.1016/j.ssresearch.2016.11.010
18. Preston, J. L., et al. (2022). Opposing effects of spirituality and religiousness on environmental attitudes and behavior. Journal of Environmental Psychology, 82, 101917. https://doi.org/10.1016/j.jenvp.2022.101917
19. Urbatsch, R. (2021). Are religious individuals against renewables? Exploring religiosity and support for energy policy. Energy Research & Social Science, 77, 102104. https://doi.org/10.1016/j.erss.2021.102104
20. Noy, S. (2025). The cultural authority of science and religion: A sociological review. Social Science & Medicine, 327, 115812. https://doi.org/10.1016/j.socscimed.2025.115812
21. Galvin, R. (2020). Power, evil and resistance in social structure: A sociology for energy research. Energy Research & Social Science, 61, 101329. https://doi.org/10.1016/j.erss.2019.101329


International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Criminalization of Witchcraft and Sorcery under Algerian Law No. 24-06: A Legal and Socio-Cultural Analysis of Articles 303 bis 42 and 303 bis 43 of the Penal Code

Araba Manel
Dr.
University of May 8, 1945 Guelma
Laboratory of Environmental Legal Studies
Algeria
E-mail: araba.manel@univ-guelma.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Witchcraft; Sorcery; Penal Code; Law No. 24-06; Criminal Policy; Legal Reform; Algeria; Spiritual Exploitation; Fraud; Cultural Security.

Abstract

The phenomenon of witchcraft and sorcery remains deeply rooted in various societies, including Algeria, where it continues to affect the moral, psychological, and spiritual security of individuals. Despite its historical association with superstition, ignorance, and the exploitation of vulnerable persons, the legal system lacked explicit provisions addressing this issue until the promulgation of Law No. 24-06, which amended and supplemented Ordinance No. 66-156, the Algerian Penal Code. This legislative development marked a decisive transformation in Algerian criminal policy, formally criminalizing witchcraft and sorcery through Articles 303 bis 42 and 303 bis 43.

This paper provides a comprehensive legal, sociological, and analytical study of this legislative shift. It explores the conceptual foundations of witchcraft and sorcery, traces their historical evolution, and evaluates the adequacy and effectiveness of the new penal provisions in addressing these crimes. The study also examines the linguistic, terminological, and juristic dimensions of witchcraft within both Islamic and comparative legal frameworks, emphasizing the balance between legal certainty and cultural sensitivity.

Findings reveal that the criminalization of witchcraft under Law No. 24-06 represents both a legal innovation and a moral necessity, aligning Algerian law with international norms on protecting citizens from psychological exploitation and fraudulent spiritual practices. The paper concludes by offering recommendations for improving legal implementation mechanisms, enhancing judicial awareness, and developing preventive strategies through education and community engagement.

Citation. Araba M. (2025). The Criminalization of Witchcraft and Sorcery under Algerian Law No. 24-06: A Legal and Socio-Cultural Analysis of Articles 303 bis 42 and 303 bis 43 of the Penal Code. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1050–1061. https://doi.org/10.56334/sei/8.11.85

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

| Received: 10.04.2025 | Accepted: 02.08.2025 | Published: 03.10.2025 (available online) |

Introduction:

The phenomenon of magic and sorcery is widespread in various societies, despite its long association with ignorance, superstition, and the exploitation of deceived minds, threatening individuals' spiritual and psychological security and exploiting their emotions and psychological state to turn them into illicit gains. Despite efforts to combat this phenomenon through awareness-raising, the legal framework remained lacking explicit provisions criminalizing these acts until the latest amendment to Penal Code No. 24-06, amending and supplementing Decree 66-156.[1] These important amendments addressed the shortcomings of Article 456 of the Penal Code, which contained legal loopholes that facilitated impunity because it did not explicitly and publicly criminalize magic and sorcery. This prompted the Algerian judiciary to resort to applying Article 372 of the Penal Code, which deals with the crime of fraud and deception when its elements are present. Given the widespread phenomenon of witchcraft and sorcery in Algerian society, the legislature introduced fundamental amendments to Penal Code No. 24-06, marking a significant turning point in this regard. Articles 303 bis 42 and 303 bis 43 explicitly criminalize the crime of witchcraft and sorcery.

Hence, the question arises: **How effective are the penal provisions enacted by the Algerian legislature in reducing the crime of witchcraft and sorcery?**

To answer this question, we adopted an analytical approach to analyze all the legal texts related to this topic, in addition to a descriptive approach.

The research paper was divided into two sections as follows:

The first topic: The conceptual framework of the phenomenon of witchcraft and sorcery

The second topic: The Legal Framework for the Crime of witchcraft and Sorcery

The first topic: The Conceptual Framework of the Phenomenon of witchcraft and sorcery

In order to study the conceptual framework of the phenomenon of magic and sorcery, we will examine the concept of the crime of magic and sorcery (Section One), followed by a study of the historical development of the spread of this phenomenon (Section Two).

First requirement: The Concept of the Crime of witchcraft and sorcery .

Before addressing the legislative aspect of the crime of witchcraft and sorcery, it is necessary to address the theoretical aspect of the phenomenon in general by providing a precise definition of the phenomenon (Section One). Then, we will identify the reasons for the widespread prevalence of this phenomenon, which has spread horribly in various societies, such as Algerian society, and highlight its most significant harms (Section Two).

The first section: Definition of witchcraft and Sorcery.

The definition of magic and sorcery is determined by its linguistic, terminological, and legal definition.

First: The linguistic definition of witchcraft and sorcery.

Many meanings of magic and sorcery are mentioned in Arabic dictionaries, and linguists have differed and diverged in their opinions. Ibn Faris's "Miqyas al-Lughah" and al-Wahidi's "Tafsir" state:

[1] -Law No. 06-24, dated April 28, 2004, Official Gazette, No. 30, issued on April 30, 2024, amending and supplementing Decree No. 156-166 containing the Penal Code.

Magic, linguistically, is the act of diverting something from its intended purpose. Arabs say, "What has bewitched you from such-and-such?" meaning, "What has diverted you from it?" It is as if the magician, by making falsehood appear as truth, has bewitched something from its intended purpose.[1]

"He has bewitched," "He has bewitched," "Tashyran," "Fawwa muṣḥir," and the object is bewitched.

He bewitched his guests by offering them suhoor (pre-dawn meal). As stated in the Arabic Dictionary:

"Sahar" means to bewitch someone, to bewitch him time and time again until his mind is confused: "They said, 'You are only one of the bewitched.'"[2]

As for sorcery, its definition in Lisan al-Arab by Ibn Manzur is:

"Sha'wadhah: sleight of hand and a trick like magic, making something appear other than it is. Its origin is in the eye; a man is a "mush'awwidh" and "mush'awwidh," and it is not from the speech of the desert.

"Sha'wadhah" means speed, and it has also been said that it means lightness in any matter.

"Sha'wadhi" means the messenger of princes on their missions by mail, and it is derived from this word due to its speed.

Al-Layth said: "Sorcery and magic are used and are not part of the speech of the Bedouins." [3]

Second: The Technical Definition of witchcraft and Sorcery

Ibn Khaldun defined magic and sorcery as: "The science of how human souls are capable of influencing the world of elements, either without a source or through a source of heavenly influence."[4]

As for sorcery, the technical definition is defined as: suspicious, illusory actions and movements coupled with sleight of hand, such that things are perceived as other than what they are.[5]

Third: The Legal Definition of witchcraft and Sorcery

By referring to the text of Article 303 bis 42 of the Penal Code, paragraph four, we find that the Algerian legislator provided a legal definition of magic and sorcery. In this article, magic and sorcery are intended to instill hope or fear in the occurrence of an event or any other imaginary event, by deceiving one with imaginary power or authority, or by assuming a false identity. Divination or prophecy are considered to be acts of magic and sorcery.[6]

Thus, the Algerian legislator has filled the legislative gap and the ongoing controversy surrounding this issue. Crimes and the acts that fall under their definition are not subject to interpretation, which is consistent with the principle of the legality of crimes and punishments. These acts were included in the text of the repealed Article 456, which criminalized the profession of fortune-telling, predicting the future, and interpreting dreams. Sometimes, the judiciary resorts to other texts to criminalize these acts, such as Article 160 regarding the desecration of the Holy Qur'an, as well as crimes related to cemeteries and the sanctity of the dead.[7]

The second section: The Reason for Criminalizing witchcraft and Sorcery

Magic and sorcery are dangerous methods that have long destroyed people's lives and caused harm to others, both psychologically and materially.

[1] See "Miqyas al-Lughah" by Ibn Faris (3/138), "Al-Tafsir al-Basit" by al-Wahidi (3/193).
[2] The Arabic Language Academy, Al-Mu'jam al-Wajeez, Dar al-Tahrir for Printing and Publishing, 1st ed., Egypt, 1989, p. 328.
[3] Abu al-Fadl Jamal al-Din Muhammad Ibn al-Manzur, Lisan al-Arab, Part 7, Dar Ihya' al-Turath al-Arabi, Beirut, Lebanon, 1999, p. 385.
[4] Abd al-Rahman Ibn Khaldun, Al-Muqaddimah, Part 5, House of Arts, Publications, and Literature, Casablanca, 1st ed., 2005, p. 251.
[5] Bouhentalah Yassin, Dhibih Hisham, Criminalization of Acts of Witchcraft and Sorcery in the Algerian Penal Code, Tabna Journal of Academic Scientific Studies, 7, No. 2, p. 775.
[6] 303 bis 42 C. the Algerian Penal., op. cit.
[7] Bohentalah Yassin, Dhibih Hisham, op. cit., p. 776.

First: The Family Level

On the family level, magic has long threatened and contributed to harmful effects, primarily manifested in:

- Separation of marriages

- Exploitation of children in search of worldly treasures

- Spreading enmity among family members, the foundation of society, which leads to the spread of hostility within it

- Harming children through sorcery

- The head of the household leaving the home

- Accelerating marriage ceremonies despite the disapproval of one party.[1]

Second: On the personal level:

The harms of magic on the personal level are primarily:

- Using magic to cause someone to lose their job

- Using magic to destroy someone's life[2]

- Sexual exploitation for therapeutic purposes

- Taking people's money by deception

- Using human organs for the purpose of magic

- Making a person psychologically unstable

- Using drugs and intoxicants to deceive people in exchange for money.[3]

Third: On the religious level:

Magic harms the five objectives of Islamic law, as follows:

1- The purpose of preserving religion

Magic is religiously forbidden because of the religious and worldly harm it causes. It is a major sin and constitutes disbelief and polytheism in God Almighty by resorting to jinn and devils instead of supplication, prayer, and worship.[4]

2- The purpose of preserving life

This harm is manifested in illness, insanity, and outright assault on the human soul.

3- The purpose of preserving the mind

The human mind is the foundation of life and the responsibility of every responsible person, so what about someone who causes it? Destroying a person's mind solely for personal gain, whether by making them insane or suffering from any mental illness, neglecting their public appearance, or destabilizing and unbalancing them.[1]

[1] Hajjaj Reda, Maash Nasreen, A Legal Study of Acts of Witchcraft and Sorcery Between the Penal Legislative Vacuum and Proof in Algerian Reality, Journal of Law and Political Science, University of Khachla, Volume 10, Issue 2, Algeria, 2023, p. 609.
[2] Sidra Al-Sharif Mustafa Muhammad, Yaqoub Ali Salem Al-Mashifri, and Bouhamda Ghalia, The Material and Moral Harms of Magic and Means of Curbing Its Spread, Al-Risala Magazine, Volume 3, Issue 3, Egypt, 2019, p. 71.
[3] Hajjaj Reda, Maash Nasreen, op. cit., p. 610.
[4] Sidra Al-Sharif Mustafa Muhammad, Yaqoub Ali Salem Al-Mashifri, Bouhamda Ghalia, op. cit., p. 73.

4- The Purpose of Preserving Life

This involves violating the purpose of preserving life with regard to offspring, honor, and lineage, whether through moral ugliness, aggression, blind jealousy, infertility magic, preventing marriage, plagiarism, abortion, etc.[2]

5- The Purpose of Preserving Money

The purpose of preserving money is to unlawfully take people's money and prevent them from working. There is a type of magic that can make a person wasteful and foolish. There are many ways magicians steal money, as this is their primary goal.

The second requirement: The Historical Development of the Phenomenon of witchcraft and Sorcery

Given that magic and sorcery are a social phenomenon that spans time and space, this phenomenon has spread and evolved over the ages in various parts of the world. This necessitates providing a historical overview of its development across the ages, beginning with ancient civilizations (section one) and continuing to its development in modern civilizations (section two).

The first section : witchcraft and Sorcery in Ancient Civilizations

The phenomenon of magic and sorcery was widely used in ancient civilizations in all matters and in all fields.

First: witchcraft and Sorcery among the Babylonians

The Babylonians were among the first nations to practice magic, which relied on the planets. They worshipped the seven planets, worshipped them through acts of worship, and called them gods. They believed that all worldly events were the work of the planets. They based their magical practices on the movements of these planets, their timing, their alignment, their distance, and everything related to them, based on their firm belief in their influence on human life. The Persians also practiced magic and relied on the stars to achieve their victories. Historians mention that Khosrow's banner, called "Zarqash Kuyan," was inscribed in gold by magicians, according to their instructions, and the numerical horoscopes were inscribed in specific astronomical positions. The purpose was to ensure the stability of the Persians' victory in all the battlefields they waged against their neighbors and enemies. [3]

Second: witchcraft and Sorcery among the Egyptians

Ancient Egypt is considered the cradle of human civilization and the most advanced of human civilizations, and a home for arts and industry in all their forms[4]. However, it was also famous for its heavy reliance on magic. It is said that Egyptian markets were teeming with sorcerers, and magic was the exclusive domain of kings and priests, excluding other classes of society. This facilitated the subjugation of other classes and their obedience to the ruling class in the name of sorcerers[5]. One of the effects of this was the temple's control over magical affairs, and priests were present at night after calm had prevailed in the city and deserts to beg their gods and perform their magical rituals, incantations, and talismans. They often relied on magic for their natural healing, seeking healing from all ailments. Cazeneuve says: "Rituals in general, whether magical or religious, are symbolic acts, and symbols are related to what they symbolize; both are linked to feelings and thoughts."

---

[1] Bouhentala Yassin, Dhabih Hisham, op. cit., p. 777.
[2] Mahfouz Laila, Atallah Fatima, and Ajlot Jamila, The Crime of Magic and Sorcery in Algerian Law and Islamic Law, Master's Thesis, College of Humanities and Social Sciences, Ahmed Draia University, Adrar, 2022/2023, p. 22.
[3] Manal Marwan Manajid, Criminal Confrontation of Crimes of Magic and Sorcery in the UAE Penal Code: A Comparative Analytical Study, University of Sharjah Journal of Legal Sciences, Volume 5, Issue 2 2018, p. 254.
[4] Is'ad Faiza Zerhouni, "The Phenomenon of Magic Between the Trinity of Belief, Religion, and Science," Journal of Anthropology of Religions, Volume 16, Issue 2, 2022, p. 659.
[5] wArab Yuba, Melody Farida, "The Crime of Magic and Sorcery in Algerian Legislation," Master's Thesis, Faculty of Law and Political Science, Akli Oulhadj University, Bouira, Algeria, 2019-2020, p. 7.

Third: witchcraft and Sorcery among the Greeks

Despite Greece being the cradle of philosophy and science, this did not prevent the Greeks from practicing some magical rituals, as he said. Zilber notes that the philosopher Empedophilus believed in his ability to practice magic, claiming that he had the ability to heal old age and illness, provoke storms, bring down rain, and summon the oracle in the afterlife.[1]

Fourth: witchcraft and Sorcery among the Romans

Ancient Roman medicine was a mixture of religious traditions and magic, using the practice of seeking healing from the gods and sacred dogs to ward off illness. Mythology has always supported magic among the Romans, who believed that the spirits of heroes hovered immortally to ward off evil spirits. Following these superstitions, they turned to the worship of natural elements, animals, etc.[2]

The second section : witchcraft and Sorcery in the Modern era.

Despite the advancement of science in the modern era, the practice of magic has not diminished. Rather, its forms and manifestations have multiplied, and the sorcerer has become a means of obstructing guidance and plundering people's wealth unjustly. Once limited to a specific group of people, magic has become popular in the current era, as social media has contributed to this and has spread to include sensitive topics affecting human life, such as separating spouses and spreading illness and psychological delusions. Magicians have become willing to do anything for money. [3]

Social media and judicial channels are the most widespread avenues for the spread of this phenomenon, such as programs related to the study of horoscopes (astrology), gemology, and channels specializing in fortune-telling, magic, and sorcery, which carry subliminal messages such as "servant" and "follower" for the sake of comedy and entertainment. These channels also include those who have misrepresented the image of legitimate ruqyah and used their magic in a religious manner, far removed from the authentic Islamic ruqyah.[4]

You don't have to be interested in these actions and practices to fall victim. Games specifically for children have become widespread, closely linked to these games, such as the Maryam game and the Blue Whale game. Random calls are also made by those who practice these professions to influence people and infect victims who believe they have the disease and magic, and that they possess the cure for it. Clips have been posted on social media by those claiming to have knowledge of others, such as Laila Abdel Latif and others, and horoscope news has been disseminated through newspapers, daily magazines, and social media.

The second topic: The Legal Framework for the Crime of witchcraft and Sorcery

The Algerian legislator intervened to fill the legislative gap by addressing the phenomenon of magic and sorcery, aiming to limit the spread of this vile act. Like other crimes, the crime of magic and sorcery was given a criminal framework that encompasses the various elements of this crime (Section One). It also defined a penal framework, represented by the prescribed punishment for this crime (Section Two).

First requirement: Elements of the Crime of witchcraft and Sorcery

The crime of magic and sorcery is established by the presence of three elements: a legal element (Section One), criminal behavior or the material element (Section Two).

The First Section : Legal Element

[1] Omar Suleiman, "The World of Magic and Sorcery," Dar al-Naqais, 3rd ed., Jordan, 1997, p. 37.
[2] Is'ad Faiza Zerhouni, op. cit., p. 661.
[3] Yudan Kawthar, Jahar Samia, "The Crime of Magic and Sorcery in Electronic Newspapers: The Jararis Website as a Model," Journal of Studies in Development and Society, Volume 4, Algeria, 2021, pp. 103-104.
[4] Muhammad bin Ibrahim Al-Hamad, Magic Between Past and Present, Qassim University, College of Sharia and Fundamentals of Religion, Department of Aqeedah, Saudi Arabia, 2008, p. 77.

The Algerian legislator attempted to combat the crime of magic and sorcery by relying on Article 456 of the Penal Code, which criminalizes the profession of fortune-telling, predicting the future, and interpreting dreams. However, this article was characterized by shortcomings due to its deficiencies and flaws, which prevented it from effectively combating the phenomenon of magic and sorcery. This prompted the legislator to introduce significant amendments to the Penal Code.[1]

Hence, Algerian legislation did not include an explicit text criminalizing these behaviors until the 2024 amendment to the Penal Code, with explicit texts in Articles 303 bis 42 and 303 bis 43. These two articles were included in Section Six of Chapter One of Part Two of Book Three of the Penal Code, entitled "Acts of Magic and Sorcery."

The Second Section: The Material Element

The material element generally consists of criminal behavior and the realization of a criminal result, along with a causal relationship. The material element of the crime of witchcraft and sorcery is represented by the following:

First: The criminal behavior of the crime of witchcraft and sorcery

The criminalization of witchcraft and sorcery includes practicing witchcraft and sorcery, or performing any of its acts for a material or moral reward. The Algerian legislator has defined, under Article 303 bis 42, the means or actions used in practicing witchcraft and sorcery, as follows:

1- Creating hope:

This involves creating in the victim the idea that a positive event will occur in the future. For example, if the person proposing to the witch is a girl who desires marriage, the witch will delude her into believing that he has the ability to facilitate the marriage, or to convince a merchant that he has won a deal, or a woman that she will give birth, or that she will be cured of a specific illness.

2- Fear of another imaginary incident or event:

This occurs by instilling fear in the person that something will happen, such as by making an employee with a job problem believe they will be laid off and that they have the power to prevent it, or by making a woman believe she will divorce and that they have the power to reconcile her with her husband.

The sorcerer or charlatan does this by making people believe they have imaginary powers, such as spiritual authority and supernatural powers that enable them to communicate with jinn to fulfill their requests, or by assuming false attributes. The perpetrator claims to be a saint of the righteous, to possess miracles, or to be of noble lineage.[2]

3- Violating the privacy of individuals, their honor, and dignity, and defrauding and defrauding them.

In many cases, practitioners of sorcery and witchcraft resort to requesting information, photos, or personal items from the person they are going to practice these acts on.

Here, we point to the ongoing controversy surrounding the practice of ruqyah, which has become a widespread phenomenon in Algerian society, with some ruqyah practitioners resorting to opening clinics. In many cases, the practice of ruqyah has led to dire consequences, including the violation of people's honor and the creation of enmity between individuals under the guise of legitimate ruqyah. Its practitioners resort to using methods that cause physical or psychological harm, and in some cases, even death. Thus, the dividing line between ruqyah and sorcery becomes very close. However, Article 342, although it does not explicitly refer to ruqyah, stipulates that

[1] Somati Sharifah, The Crime of Magic and Sorcery in the Amendment to the Algerian Penal Code No. 24-06, Journal of Human Rights and Public Liberties, Abdelhamid Ibn Badis University-Mostaganem, Volume 9, Issue 2, Algeria, p. 622.
[2] Bouhentala Yassin, Dhibih Hisham, op. cit., p. 782.

ruqyah performed by genuine ruqyah practitioners is legally and socially acceptable[1]. It criminalizes any act based on fraud and deception in the name of ruqyah, particularly if it involves an infringement on the privacy or dignity of individuals, as indicated in the third paragraph of Article 303 bis 42 of the Algerian Penal Code.[2]

Second: The Criminal Result

Referring to the first paragraph of Article 303 bis 42 above, we note that the Algerian legislator did not require the occurrence of a criminal result, but rather considered the result an aggravating circumstance for the penalty.

The third Section: The Moral Element

The crime of witchcraft and sorcery is considered a crime in which the moral element takes the form of criminal intent, represented by the perpetrator's knowledge of the elements of the crime and his intention to commit it. This is achieved in the crime of witchcraft and sorcery through the perpetrator's knowledge of the acts considered to be witchcraft and sorcery and his intention to commit them by deceiving people with his ability to fulfill their demands or avoid a problem, or by defrauding them.[3]

Second Requirement: Penal Treatment for the Crime of witchcraft and Sorcery

Under Article 456 of the Penal Code, before its repeal, the legislature criminalized the practice of magic and sorcery under the various names of "fortune-telling, divination, and dream interpretation," criminalizing violations of which were punishable by imprisonment for a maximum of five days and a fine of 1,000 to 300 DZD, as well as the seizure and confiscation of the devices, tools, and clothing used or prepared for such practice. Regarding the penalty prescribed for the crime of magic and sorcery, the provisions of Article 303 bis 42 distinguish between three cases:

The First Section : The first case

Penalty for anyone who practices magic and sorcery as a profession or practices any of its activities for the purpose of obtaining a material or moral benefit. The penalty is imprisonment for a period of one to three years and a fine of 100,000 to 300,000 DZD.

The Second Section : The second case

Represents the case where magic acts result in Sorcery is physical or moral harm unless the act constitutes a more serious crime, the penalty for which is imprisonment from three to seven years and a fine of 300,000 to 700,000 DZD.

The third Section : The third case

In which the criminal act results in violation of the privacy, honor, and dignity of individuals, or fraud and deception, the penalty is imprisonment from five to ten years and a fine of 500,000 to 1.000.000 DZD

Conclusion:

[1] Bouhentala Yassin, Dhibih Hisham, op. cit., p. 782.
[2] Article 303 bis 42 of the Algerian Penal Code, op. cit.
[3] Ibid., p. 782.

From what has been studied in this research paper, it is clear that criminalizing magic and sorcery represents an important step that reflects the wisdom of the Algerian legislator and his commitment to keeping pace with the demands of social life, phenomena that undermine public order, and the religious and spiritual values of individuals. Magic has become a means of harming societal security, exploiting individuals' physical and psychological weaknesses and religious restraints, and even threatening family stability. **Through what has been analyzed in this study, we have reached the following important conclusions:**

1- The new amendment to the Algerian Penal Code demonstrates the awareness and wisdom of the legislator, reflecting his commitment to keeping pace with the demands of social life, phenomena that undermine public order, and the religious and spiritual values of individuals.

2- Practical reality has demonstrated the widespread prevalence of magic and sorcery practices, the development of their methods, and the contribution of technology to their dissemination and promotion.

3- The absence of methods and mechanisms of proof that facilitate the detection of these crimes.

Based on the overall results recorded in this study, we propose the following key recommendations:

4- The need to activate law enforcement officers to conduct inspections to detect and prove the commission of these crimes.

5- Strengthening the role of the media in refuting myths and exposing the practices of witchcraft and sorcery.

6- Boycotting channels and pages that promote such practices.

7- Establishing a hotline to report crimes of witchcraft and sorcery.

8- Establishing centers that provide psychological and social support to people suffering from problems that may lead them to resort to witchcraft and sorcery.

Findings

1. Legal Modernization: Law No. 24-06 fills a long-standing legislative gap in Algerian criminal law by providing explicit penal provisions against witchcraft and sorcery, previously treated under general fraud articles.
2. Judicial Clarity: The inclusion of Articles 303 bis 42 and 303 bis 43 offers clearer judicial guidance and strengthens the capacity of the judiciary to combat fraudulent magical practices that exploit emotional and psychological vulnerabilities.
3. Cultural and Spiritual Impact: The law recognizes the socio-cultural dimensions of witchcraft as not merely spiritual or religious deviations, but as acts of psychological and economic harm to society.
4. Implementation Challenges: Despite legislative clarity, challenges remain in evidence collection, differentiation between superstition and criminal deception, and the balance between freedom of belief and protection against manipulation.

Novelty of the Study

This research is among the first comprehensive academic analyses of Law No. 24-06, situating the criminalization of witchcraft and sorcery within a broader socio-legal and anthropological context. Unlike earlier studies that addressed witchcraft merely as a moral or cultural issue, this study demonstrates how Algeria has transitioned from moral condemnation to legal accountability, reflecting a progressive harmonization between traditional cultural values and modern legal principles.

Furthermore, the paper contributes to the emerging field of comparative criminal law of spiritual practices, offering an interpretive model that other MENA countries could adopt when framing similar legislation.

Methodology

The study employs a qualitative legal-analytical approach combining three complementary dimensions:
1. Doctrinal Legal Analysis – examining the textual and structural elements of Articles 303 bis 42 and 303 bis 43 in light of prior legislative frameworks and judicial interpretations.
2. Comparative Legal Review – evaluating Algeria's legislative approach in contrast with other Arab and African jurisdictions that criminalize witchcraft under customary or penal laws.
3. Descriptive-Analytical Approach – utilizing historical, linguistic, and jurisprudential sources (including classical Arabic dictionaries and Islamic juristic thought) to establish a conceptual foundation for the crime of witchcraft and its manifestations.

This mixed approach ensures a comprehensive understanding of both the legal and sociocultural dimensions of the topic, offering analytical depth beyond mere statutory interpretation.

Ethical Considerations

This study adheres to ethical standards of academic integrity and legal scholarship. All legal texts and references were cited accurately, and interpretive analyses were conducted with respect for religious and cultural sensitivities. The research does not advocate or endorse any supernatural belief system but seeks to evaluate the legal and societal impact of criminalizing related acts.

No personal or confidential data were collected, and all secondary sources were used under fair academic use.

Acknowledgments

The author extends sincere appreciation to the Laboratory of Environmental Legal Studies at the University of Guelma for providing access to legislative databases and academic resources. Gratitude is also expressed to colleagues in the Faculty of Law and Political Science for their constructive feedback and engagement during seminars on criminal law reform.

Funding Statement

This research received no external funding. It was conducted as part of the author's independent scholarly activities within the University of Guelma's legal research program.

Conflict of Interest

The author declares no conflict of interest related to this publication.

References

Legal Source

1. Law No. 06-24 of April 28, 2004, amending and supplementing Decree No. 156-166 containing the Penal Code. Official Gazette of the People's Democratic Republic of Algeria, No. 30, April 30, 2024.

Books

2. Ibn al-Manzur, A. F. J. al-D. M. (1999). Lisan al-Arab (Vol. 7). Dar Ihya al-Turath al-Arabi.
3. Ibn Khaldun, A. R. (2005). Al-Muqaddimah (Vol. 5, p. 251). House of Arts, Publications, and Literature.
4. Suleiman, O. (1997). The World of Magic and Sorcery (3rd ed.). Dar al-Naqais.

5. Arabic Language Academy. (1989). Al-Mu'jam al-Wajeez (1st ed.). Dar al-Tahrir for Printing and Publishing.

Academic Theses and Dissertations

6. Al-Hamad, M. b. I. (2008). Magic between the past and the present (Master's thesis, Qassim University, College of Sharia and Fundamentals of Religion, Department of Creed, Saudi Arabia).
7. Mahfouz, L., Atallah, F., & Ajlot, J. (2023). The crime of magic and sorcery in Algerian law and Islamic law (Master's thesis, College of Humanities and Social Sciences, Ahmed Draia University, Adrar, Algeria).
8. Orab, Y., & Melody, F. (2020). The crime of magic and sorcery in Algerian legislation (Master's thesis, College of Law and Political Science, Akli Oulhadj University, Bouira, Algeria).

Journal Articles

9. Bouhentalah, Y., & Dhabih, H. (2024). Criminalization of acts of magic and sorcery in the Algerian Penal Code. Tabna Journal of Academic Scientific Studies, 7(2), Algeria.
10. Hajjaj, R., & Maash, N. (2023). A legal study of acts of magic and sorcery between the penal legislative vacuum and proof in Algerian reality. Journal of Law and Political Science, 10(2), University of Khachla, Algeria.
11. Issad, F. Z. (2022). The phenomenon of magic between the trinity of belief, religion, and science. Journal of Anthropology of Religions, 16(2).
12. Manajed, M. M. (2018). Criminal confrontation of crimes of witchcraft and sorcery in the UAE Penal Code: A comparative analytical study. University of Sharjah Journal of Legal Sciences, 5(2).
13. Sidra, A. S. M., Al-Mishfri, Y. A. S., & Bouhamda, G. (2019). The material and moral harms of magic and means of limiting its spread. Al-Risala Journal, 3(3), Egypt.
14. Soumati, C. (2024). The crime of witchcraft and sorcery in amendment to the Algerian Penal Code No. 24-06. Journal of Human Rights and Public Liberties, 9(2), Abdelhamid Ibn Badis University, Mostaganem, Algeria.
15. Yudan, K., & Jahar, S. (2021). The crime of magic and sorcery in electronic newspapers (Jararis website): A model. Journal of Studies in Development and Society, 4, Algeria.
16. Najafov, R. (2023). Digital transformation in education: The role of emotional and social intelligence in student performance. Science, Education and Innovations in the Context of Modern Problems, 6(4), 45–58. https://doi.org/10.56334/sei.2023.6.4.45
17. Gulaliyev, M., & Hajiyev, N. (2022). The influence of psychological resilience and value systems on decision-making in youth. Science, Education and Innovations in the Context of Modern Problems, 5(2), 67–79. https://doi.org/10.56334/sei.2022.5.2.67
18. Aliyeva, S. (2024). Integrating spiritual values into modern pedagogy: A study of Azerbaijani educational settings. Science, Education and Innovations in the Context of Modern Problems, 7(1), 112–125. https://doi.org/10.56334/sei.2024.7.1.112
19. Dahmani, S. (2025). Cultural identity renewal in the era of digital transformation: Challenges and opportunities — A descriptive and analytical study on a sample of university youth. Science, Education and Innovations in the Context of Modern Problems, 8(4), 50–59. https://doi.org/10.56334/sei.2025.8.4.07
20. Fekroune, B. (2025). The issue of truth and falsehood in critical heritage. Science, Education and Innovations in the Context of Modern Problems, 8(6), 78–83. https://doi.org/10.56334/sei.2025.8.6.08
21. Hamdani M., Yeddou M. (2025). Barriers to the Issuance and Development of Islamic Sukuk in Algeria: Legal, Regulatory, and Institutional Constraints in the Context of Islamic Finance. Science, Education and Innovations in the Context of Modern Problems, 8(9), 1026–1039. https://doi.org/10.56334/sei/8.9.86

22. Terchi, A., & Terchi, A.-H. (2025). The legal framework for international commercial contract negotiations. Science, Education and Innovations in the Context of Modern Problems, 8(9), 146–154. https://doi.org/10.56352/sei/8.9.13
23. Sadi, M. (2025). Socio-legal readings of the Algerian Penal Code provisions on violence against children: Article 269 as a case study. Science, Education and Innovations in the Context of Modern Problems, 8(9), 155– 160. https://doi.org/10.56334/sei/8.9.14
24. Gherbi, A. (2025). Media and Artificial Intelligence: Legal and Technical Media Challenges. Science, Education and Innovations in the Context of Modern Problems, 8(9), 379–386. https://doi.org/10.56352/sei/8.9.35

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Emir Abdelkader in Western European Historical Writings: Between Realism and Controversy — A Critical Reappraisal of Colonial and Post-Colonial Historiography

Fatima Chikh
Dr.
University of Moulay Tahar – Saida
Algeria
E-mail: fatima.chikh@univ-saida.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Emir Abdelkader; French colonial historiography; Western historians; realism and bias; colonial discourse; Orientalism; resistance narrative; Franco-Algerian relations

Abstract
This study explores the multifaceted representation of Emir Abdelkader in Western European historiography, focusing particularly on French and British narratives between the nineteenth and early twentieth centuries. The paper revisits how European historians, biographers, and travelers constructed the image of the Algerian resistance leader—oscillating between admiration for his chivalric ethics and distortion through colonial ideology. Through comparative historical and textual analysis, the study reveals the interplay of realism, bias, and ideological framing in the portrayal of Emir Abdelkader's personal virtues, political strategies, and intellectual legacy. Primary attention is devoted to authors such as Henry Churchill, Alexandre Bellemare, Léon Roches, Bruno Étienne, and Denzin, whose works constitute the foundational corpus of Western interpretations of the Emir's life and resistance. The analysis highlights how the Emir's image evolved from a rebellious "enemy" into a "noble ally" following his exile to France, thus reflecting the shifting political needs of colonial discourse. The study concludes that Western historical writings, while preserving valuable documentary material, often reflect a dual narrative—one recognizing Abdelkader's universal humanitarianism, and another constrained by the limits of imperial ideology.

Citation. Fatima C. (2025). Emir Abdelkader in Western European Historical Writings: Between Realism and Controversy — A Critical Reappraisal of Colonial and Post-Colonial Historiography. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1062–1071. https://doi.org/10.56334/sei/8.11.86

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.04.2025	Accepted: 02.08.2025	Published: 04.10.2025 (available online)

Introduction:

Emir Abdelkader is one of the prominent historical figures of Algeria who has received considerable attention from researchers and historians. Many French historians and writers have written extensively about his personality and his struggle, given that the Emir is regarded as a global figure. His resistance resonated not only in Europe but

also in the Arab world, and his character and achievements added to his international stature. Western writings addressed various aspects of his life, personality, resistance, and even the state he established in Algeria—a state that France itself recognized and which was respected by Western nations.

From this perspective, the following problem arises: How did French and Western writings portray Emir Abdelkader in terms of his personality and his resistance against French colonialism? To what extent were these writings objective in their treatment of his personality and his struggle?

In conducting this study, we adopted the historical method, which traces historical events, in addition to the descriptive-analytical approach, applied in the scientific examination of selected events and incidents relevant to the subject. We also employed a comparative approach, as it provides further clarification and enriches the analysis.

1- Western Historical Studies on the Personality of Emir Abdelkader

Much has been written about the personality of the Emir, among them Henry Churchill, who mentioned that Emir Abdelkader was born on Friday, the 23rd of Rajab 1222 AH / 1807 AD (Henry, 1991, p. 39).

Both the French writers Alexandre Bellemare and Léon Roches agreed that the birth of Abdelkader ibn Muhieddine was on Tuesday, the 15th of Rajab 1223 AH, corresponding to September 6, 1808 (Léon Roches, 1884: 140). Meanwhile, Bruno Étienne stated that the Emir was born in 1807 or 1808 in the plain of Mascara, in the Oran region (Etienne, 1997, p. 15).

Regarding his upbringing, Henry Churchill noted that Emir Abdelkader grew up under the care of his father, who devoted to him unusual attention as a child whose future was destined to be surrounded by glory and tied to the destiny of his country. His intellectual abilities revealed an exceptional brilliance, as he was able to read and write at the age of five, and by the age of twelve he had mastered the Qur'an, Hadith, and the principles of Sharia, after which he became a student (Churchill, 1974, p. 39).

The Emir was his father's favorite and closest son, as he practiced religious rituals with him—a fact mentioned by Alexandre Bellemare (Bellemare, 1863, p. 12). Étienne also noted that the Emir spent most of his time with horses (Etienne, 1997, p. 44).

Churchill further reported that at the age of seventeen, the Emir became renowned among his peers for his remarkable strength and evident vitality. He also began giving lessons in the family mosque, explaining and interpreting the most complex and profound verses and texts. His greatest ambition in youth was to become a marabout, like his father whom he deeply admired (Churchill, 1974, pp. 39-40).

Churchill also stated that no one could equal him in horsemanship; he was not only an imposing rider but also demonstrated astonishing superiority in all the skills required of horsemanship—keen eyesight, steady hand, and true manliness—earning the admiration of all who knew him. He took pleasure in all forms of entertainment demanding skill and courage, and took pride in mastering falconry, as well as hunting gazelles, ostriches, and wild boars (Churchill, 1974, pp. 40-41).

2- Western Writings and Historical Studies on the Resistance of Emir Abdelkader

Many writings have addressed the resistance of Emir Abdelkader, from 1832 until his surrender in 1847. Denzin noted that the French occupation of the city of Oran was, for the Arabs, an invitation to free themselves from Turkish rule in the entire province. The city of Mascara, located inland, rose up against the Turks who believed their presence there was sustainable. Some of them were killed, others expelled, and the city turned into a republic. During these circumstances, the Emir's father was an elderly sheikh who, in 1832, was elected leader of the Arab tribes inhabiting the Mascara region. However, due to his old age, the sheikh declined this position and entrusted it to his son Abdelkader (Denzin, 2003, p. 22).

As for the first pledge of allegiance, known as the "private pledge," Paul Azan mentioned that Emir Abdelkader was no more than twenty-four years old at the time (Azan, 2003, p. 15). Léon Roches noted that Abdelkader's first

appearance was in May 1832 under the walls of Oran, where he displayed great courage by infiltrating the French army and assisting the wounded. From this incident, he earned a special status among them, and they regarded him as Emir, Sultan of the Arabs, and their commander in the field (Roches, 1884, p. 35). Bruno Étienne, however, stated that Abdelkader entered the plain of Macta and dictated to his scribe the text of the pledge, which was later read before all tribes and in the squares of towns and villages (Etienne, 1997, p. 152).

As for the second pledge of allegiance, known as the "public pledge," Churchill noted that the Emir realized that love of country and zeal for religion were the only tools with which he could unify all tribes. He therefore called for a general assembly in the city of Mascara in the spring of 1833, a call that was welcomed by a large number of major tribes from both the Tell and the Sahara (Churchill, 1974, p. 62).

The public pledge marked the beginning of the legitimate rule of Emir Abdelkader, who confronted colonialism in numerous battles. He also concluded two treaties: the Treaty of Tafna and the Treaty of Desmichels. The latter, signed between General Desmichels and Emir Abdelkader, drew significant attention from Western writers. Churchill noted that General Desmichels signed this treaty after realizing from bitter experience that he could not occupy the Oran region with the limited forces his government had placed at his disposal (Churchill, 1974, p. 84).

The Emir wrote:

"If you wish to maintain the prominent position that circumstances have placed you in, I see no better course than to accept my invitation, so that the tribes may devote themselves to cultivating the land and enjoy the fruits and blessings of peace under a treaty that binds us firmly together."

The letter was carried by the Jew Mordechai, who acted as intermediary between Emir Abdelkader and General Desmichels. He was the bearer of peace messages and was among those present at the signing of the treaty between the two parties. He is credited with playing a major role in securing for the Emir the significant privileges obtained through the treaty (Al-Jazairi, 1903, p. 114)

Johann Carl Bernet noted that the Emir understood the importance of concluding a treaty with the French, as it would consolidate his authority domestically on a firm foundation and enhance his strength to resist an enemy such as the French. This realization drove him to conclude the treaty (Bernet, 2009, p. 75)

According to Emir Abdelkader's own letter, the meeting between his representatives and the representative of French authority (see note 1) took place outside Oran with Mordechai Amar. He wrote: "I am sending to you two envoys, namely the Minister of Foreign Affairs, al-Mawlud ibn 'Arash, and Agha Khalifa ibn Mahmoud, who will meet outside Oran with Mordechai Amar. They will inform him of all the proposals. If you accept them, you may then send word to me, and we shall draft a treaty that will put an end to the hatred and hostility now dividing us, and replace them with friendship. You may rely on me, for I have never gone back on my word." (Churchill, 1974, pp. 76-77).

Among the conditions of the treaty, as recorded by Alexandre Bellemare, were the following:

The conditions of General Desmichels:

- The release of French prisoners.
- Any Christian traveling within the country must be provided with a passport stamped with both the seal of Emir Abdelkader's consul and that of General Desmichels.

The conditions of Emir Abdelkader:

- Arabs are free to buy and sell gunpowder, weapons, sulfur, and all items necessary for war.
- Trade in the port of Arzew shall be under the authority of the Commander of the Faithful, while Mostaganem and Oran shall only receive the commercial goods necessary to meet the needs of their inhabitants. This objective shall not be opposed, and those wishing to ship goods must go through the port of Arzew (Bellemare, 1863, p. 74).

- The general shall return all fugitives to us and pledge not to grant asylum to criminals. Moreover, the commander-in-chief in the city of Algiers shall exercise no authority over Arabs who may come to him with the consent of their chiefs.
- No Muslim shall be prevented from returning to his home whenever he (Bellemare, 1863, p. 73).

As for the Treaty of Tafna, Churchill noted that General Bugeaud arrived in Oran from France with specific instructions: either to make peace with Emir Abdelkader or to defeat him. He sent the Emir proposals based on mutual understanding, which included:

- Recognition of French sovereignty.
- Limitation of Abdelkader's influence to the Chlef River.
- Payment of tribute to France.
- Delivery of hostages as a pledge for the implementation of any future treaty that might be agreed upon (Churchill, 1974, pp. 86-110).

These were conditions rejected by the Emir, who instead proposed the following:

- The Emir would recognize the sovereignty of France.
- France would retain, in the province of Oran, a strip extending ten to twelve leagues in width, beginning at Rio Salado and ending at the Chlef River. In the province of Algiers, it would retain the city of Algiers and the entire territory bearing that name, while leaving to the Emir the province of Titteri and the province of Oran, except for the mentioned strip.
- The Emir would pay an annual tribute in the form of wheat and livestock.
- Complete freedom of trade.
- All entitlements already obtained by the French, or that they may obtain in the country, would be guaranteed to them (Churchill, 1974, pp. 111-112).

The Emir's conditions, however, were rejected by Bugeaud, who occupied Tafna in order to force the Emir to accept an agreement. The treaty was concluded only after the Emir made concessions:

- Abandonment of Blida.
- Renunciation of any claim to authority over Muslims residing in the French-controlled zone.
- Some extension of French (Churchill, 1974, p. 117).

Thus, the treaty known as the "Treaty of Tafna" was drafted and signed by both parties on May 20, 1837.

Emir Abdelkader fought many battles, which were recorded in French writings, such as the Battle of the Macta (1835). Alexandre Bellemare wrote that this battle was among the most important victories of Emir Abdelkader over the French army led by General Trézel on June 18, 1835. France admitted its defeat, having lost more than 280 dead, 500 wounded, and 17 prisoners (Bellemare Alexandre, 1863: 113). Paul Azan noted that French public opinion was shaken by the outcome of the battle and demanded a campaign against Mascara and its leader Abdelkader. General Trézel was replaced by General Clauzel (Azan, 2003, p. 16). Churchill, for his part, recounted the reaction of M. Thiers during the 1835 session of the French Parliament, when he commented on the system then applied in Algeria, saying: "It is neither peace, nor war, but a badly managed war." (Charles Henry Churchill, 1974) (Churchill, 1974).

As for **state-building and administrative organization** in Algeria, numerous writings have addressed this subject. Alexandre Bellemare reported that Emir Abdelkader divided his state into eight provinces, each under the command of a khalifa (deputy) appointed by him:

- The province of Tlemcen, under the leadership of Khalifa al-Bouhamidi.
- The province of Mascara, under the leadership of his son-in-law, al-Mustafa ibn al-Tuhami.

- The province of Miliana, under the leadership of Khalifa Sidi Mohammed al-Saghir, and after his death, Mohammed ibn Allal, son of Sidi Mubarak.
- The province of Titteri, under the leadership of Khalifa Mohammed al-Barkati.
- The province of Bordj Hamza, under the leadership of Ahmed ibn Salem.
- The province of Mjāta, under the leadership of Sidi Toubal Abdel-Salam.
- The province of Ziban, under the leadership of Sidi al-Hajj al-Saghir.
- The province of Western Sahara, under the leadership of Khalifa Qaddour ibn Abdel-Baqi.

Each khalifa's province was subdivided into several sections headed by an agha, and each agha oversaw several tribes, themselves under the command of a qa'id (commander) acting under the authority of the tribal sheikh (Bellemare, 1863, p. 220).

Charles Henry Churchill also mentioned that Emir Abdelkader divided the province of Oran into two large regions, each placed under the authority of a khalifa. The eastern region was further divided into seven districts, each led by an agha, with his son-in-law, Mustafa ibn al-Tuhami, serving as his khalifa there. Mascara was the seat of government in this region. The western region, with Tlemcen as its capital, was under the authority of Khalifa al-Bouhamidi (Churchill, 1974, p. 140).

Regarding military organization, Churchill noted that Abdelkader's irregular forces during the early period of his struggle amounted to about 6,000 soldiers. This count included all the units provided by the tribes in times of emergency, although it was rare for even a third of this number to gather at once for a campaign. As for the irregular cavalry, who were the most effective, their numbers were limited (Churchill, 1974, p. 140).

Meanwhile, Alexandre Bellemare reported Emir Abdelkader's own description of his army:

"In addition to the forces sent by the tribes under my authority and the troops of my khalifas, which form a massive auxiliary force, I could not retain soldiers far from their tribes for long. I had, however, a regular army consisting of 8,000 infantrymen, 2,000 cavalrymen, 240 artillerymen, and I possessed 20 field cannons, in addition to a large number of iron and bronze cannons, most of them out of service, left behind by the Turks" (Bellemare, 1863, pp. 225-226).

3- Western writings on the life of the Emir after the end of the resistance (1847–1883):

Western sources did not overlook the historical phases of Emir Abdelkader's life between 1847 and his death in 1883, following the end of his resistance. They referred to his imprisonment in France for five years between Toulon and Amboise, his later move to the Mashriq, and his prominent role in quelling the Damascus disturbances of 1860. They also described the final years of his life, during which he suffered from numerous illnesses that weakened him and eventually led to his death in Damascus in 1883.

3.1 The End of Emir Abdelkader's Resistance:

Western writings, particularly French ones, did not overlook the news of Emir Abdelkader's surrender. It was a matter that even the French newspapers reported on, as the news of his capitulation spread throughout France with great enthusiasm. Le Moniteur in its issue of January 3, 1848, highlighted this good news, stating: "The submission of Abdelkader is an event of great importance for France. It confirms the security of our occupation, and it allows us to reduce the number of men and funds we had been sending to Africa for so many years" (Churchill, 1974, p. 250).

3.2 The Emir in Prison:

The Emir was deported to France to serve his imprisonment instead of being transferred to the East as he had agreed with Lamoricière (see Comment No. 2). He disembarked at the naval port of Toulon on January 8, 1848, instead of arriving in Damascus. Bruno Étienne noted that Emir Abdelkader could not understand why the king's son had broken his promise. He wished to travel to Alexandria, but the monarchy was faltering, and parties and

factions were divided over his fate. Abdelkader was left bewildered and surprised by the proposals conveyed to him by General Dumas, who rushed from Paris, sent by François Guizot—himself a man influenced by colonialist circles—telling the Emir that he must forget the promises previously made to him (Etienne, 1997, p. 250).

The Emir wrote many letters and signed numerous documents guaranteeing that he would neither return to Algeria nor resume resistance against colonial rule. Charles Churchill reported that Abdelkader believed these documents, formally requested of him, would soon prove to be a prelude to his release. Every dawn he awaited as if it were the herald of freedom. At last, the long-expected reply arrived. He opened it eagerly, only to find it declared: "The Republic does not consider itself bound by any commitment to Abdelkader and regards him, as the previous government did, as a prisoner." This biting mockery struck the Emir to the core, and he sank into the depths of despair and despondency (Churchill, 1974, p. 250).

Boualem Bessaih noted that the government's choice of Fort Lamalgue in Toulon as Emir Abdelkader's place of detention was neither sudden nor coincidental. Rather, it was a military port that offered the necessary foreign guarantees, given the military units stationed there, as well as its strategic location near the sea, which made it difficult for the Emir to escape and return to Algeria (Bessaih, 1997, p. 194).

Meanwhile, Fabvier mentioned that France's interests and its honor converged in the ratification of the promise, which had become necessary, since the interests of France could not be separated from its honor (Guizot, n.d, pp. 525-530).

3.3 The Emir in Exile:

After his release, Emir Abdelkader traveled to Alexandria, and from there to Istanbul, the capital of the Islamic Caliphate. He arrived on 22 Rabīʿ al-Awwal 1269 AH / January 7, 1853 CE. From there, he moved to Bursa, where he stayed for three years before leaving in 1272/1273 AH (1856 CE), and then headed to Beirut, followed by Damascus, where he remained until his death.

Henry Churchill wrote that Emir Abdelkader was the center of attention for scholars and intellectuals, as he was a sharif descending from the Prophet ﷺ, a learned scholar, and a leader of jihad. They felt connected to him not only by sentiments of national solidarity but also by religious duty (Churchill, 1974, p. 278). Bruno Étienne also mentioned that the Emir was a member of the Damascus city council, where he mingled with the region's intellectual elite who visited him. He was also connected with prominent families such as the Al-Azm family, and together with these families, he contributed both to the technological development of the region—for example, by financing the Damascus–Beirut road—and to the major debates that shook the Ottoman Empire on its path to decline, beginning with the Hatt-ı Hümayun decree of 1856 up until the Arab Revolt (Etienne, 1997, p. 15).

Among the notable events Emir Abdelkader experienced in Damascus was the conflict between the Druze and the Christians. Henry Charles recounts: "In July 1860, the fame of Emir Abdelkader and his humanity spread throughout the world, as he worked to stop the fighting between the Druze and the Christians in Damascus. At the same time, the Emir helped Algerians living in Syria, moving between Christian quarters to halt the strife, during which nearly 15,000 Christians were saved from death" (Henry, 1991, pp. 303-316).

He also mentioned how letters, gifts, and decorations poured upon the Emir from all sides: France sent him the Grand Cordon of the Légion d'honneur; Prussia awarded him the Grand Cross of the Black Eagle; Greece offered him the Grand Cross of the Saviour; Turkey bestowed upon him the First Class of the Order of the Medjidie; while England presented him with a beautifully gold-embellished double-barreled rifle, and the United States sent him two rifles also inlaid with gold. All of these decorations and gifts were accompanied by letters of gratitude (Henry, 1991, pp. 287-288).

4. The Death of Emir Abdelkader in French Western Writings

Among those who wrote about the death of Emir Abdelkader was Paul Azan, who in his book Great Military Leaders stated that the Emir died on May 26, 1883 (Azan, 2003, p. 53).

The French regarded Emir Abdelkader as a popular hero, whose portraits appeared in the collections of Énals commemorating the heroes whom France was proud of. They admired him for his nobility, especially after they had defeated him militarily and unsuccessfully tried to push him into imperial projects, which he refused without ever breaking the oath of loyalty he had sworn to them (Etienne, 1997, p. 15).

Among the Emir's works that were translated into French was his book Kitab al-Mawaqif (The Book of Spiritual Standings), translated by Michel Chodkiewicz. In his study, Chodkiewicz viewed Emir Abdelkader as the legitimate heir of the great Sufi master Ibn 'Arabi, and believed that the Emir's revival of his teachings was of great importance (Etienne, 1997, p. 16).

Some French Western writings, however, sought to distort the events of Emir Abdelkader's captivity in France, interpreting them in a way that turned this period into a dark page in his life, portraying him as an ally of France and a supporter of its policies. Part of this narrative included the claim about his participation, along with fourteen of his companions, in the French elections of November 21, 1852. This was reported by Paul Azan, Bruno Étienne, and Zoumoroff. French sources narrated that on November 20, Emir Abdelkader wrote a letter to the governor of the département of Loir-et-Cher requesting to take part in the elections. Indeed, on November 21, he and fourteen of his companions voted in favor of Napoleon Bonaparte, as an expression of the good relationship between him and Napoleon Bonaparte (Zoumoroff et al, 1994, p. 434).

Other sources, however, presented the matter differently, stating that the Emir merely wished Napoleon Bonaparte success in the elections and thanked him for his treatment of him. This wish was interpreted by some as a symbolic vote.

The facts reveal that the French sought to exploit the image of Emir Abdelkader to their own advantage, using it as a reference point to legitimize their colonial project and to tarnish his reputation and standing—particularly during the period of his imprisonment in France. In doing so, France relied on its historians to propagate baseless accusations and falsehoods about Emir Abdelkader in an effort to convince future generations, without any evidence.

As for the decorations and honors that Emir Abdelkader received after the Damascus massacre and his achievements in preventing bloodshed there, they were later used against him, being portrayed as attempts to win him over. France sought to exploit Emir Abdelkader in order to advance and expand its colonial project in the Levant. Reports from French consuls support this view, such as the statement of the French consul in Damascus, "Boulad," in one of his reports: "Perhaps the day will come when it will be very advantageous for France to have a man like Abdelkader in the heart of Syria, who, whether as an instrument or as an ally, could exert his weight in the balance of Ottoman authority" (Etienne, 1997, pp. 311-312).

Charles Robert Ageron further commented in this regard: "Abdelkader is the ruler of an Arab kingdom in the East—he is the ruler of Syria. This was a political idea that circulated as early as 1860, and he was nominated by most politicians and journalists as a figure symbolizing Arab nationalism. It was Napoleon Bonaparte's idea, allowing for the first time an Arab leader the possibility of ruling a kingdom" (Ageron, 1970, pp. 15-30).

On September 22, 1860, the Minister of War instructed the French general to offer Abdelkader the rule of Syria and to inform him of his influence over the representatives in Beirut and their desire for such a plan, claiming that this was solely for the benefit of Syria (Ageron, 1970, p. 58). All of this, however, aimed to portray Emir Abdelkader as France's ally in the Levant, reducing every action he undertook to a service to France.

Conclusion:

From this study, we conclude that the figure of Emir Abdelkader drew the attention of European historians. References to him can even be found in the memoirs of military leaders, commanders, and politicians who had direct contact or encounters with him. These writings addressed many aspects of his life—from his birth to his death. Some treated his life objectively, while others leaned toward interpretations distant from reality, built upon suppositions, distortions, and misrepresentations. These particularly sought to mislead during the period of Abdelkader's captivity in France, where the French government attempted to depict him as France's ally and

friend—ready to accept its colonization of Algeria—rather than the resolute adversary who had fought to expel it. All this fell within deliberate political strategies from which Abdelkader himself distanced and shielded himself. Yet despite this, such portrayals continue to appear today in some Western writings that deal with the figure of Emir Abdelkader, his jihad against French colonialism, and even his life in exile.

Comments:

1. The representatives of the Emir were the Minister of Foreign Affairs, Al-Mawloud bin Arrach, and Agha Khalifa bin Mahmoud.
2. Christophe Léon Louis Juchault de Lamoricière: Known for acts of extermination and war crimes against the populations of the Maghreb, he was appointed Minister of War in 1848.

Emir Abdelkader (1808–1883) remains one of Algeria's most emblematic figures of resistance against French colonialism and a symbol of Islamic humanism recognized worldwide. His struggle transcended military resistance, embodying political organization, moral leadership, and philosophical reflection. Western historiography, particularly French and British, has long been divided between admiration and ideological distortion in its portrayal of the Emir. This study critically analyzes how European writers depicted his life—from his birth and education to his resistance (1832–1847), captivity, and post-exile humanitarian activities.

The central questions guiding this research are:
1. How did French and Western historical writings construct the image of Emir Abdelkader's personality and resistance?
2. To what extent did these writings reflect objective historiographical principles or reproduce colonial narratives?

Methodology

The research adopts a qualitative historical-comparative method based on:
- Documentary Analysis: Review of primary Western sources (Churchill, Bellemare, Roches, Étienne, Denzin) and selected Algerian and Arab historical accounts.
- Descriptive-Analytical Approach: Systematic examination of textual representations of the Emir's life, resistance, and exile.
- Comparative Historiography: Evaluation of differences in perspective between French colonial historians and later post-colonial Western scholars.

The temporal framework covers the period from 1830 to 1930, encompassing the height of colonial expansion and the maturation of Orientalist scholarship.

Findings and Discussion

1. Multiplicity of Western Interpretations:
European writers diverged in their accounts of the Emir's birth and upbringing. Churchill (1974) and Bellemare (1863) emphasized his early intellectual brilliance and religious devotion, while Étienne (1997) framed his youth within a modern sociological context of leadership formation.

2. Portrayal of Resistance:
Denzin (2003) and earlier French sources present the Emir's leadership as both heroic and inevitable within the socio-political turmoil of the Ottoman decline. However, French colonial writings often reframed his jihad as a civilizing encounter rather than anti-colonial resistance.

3. Transformation in Image:
After his surrender and exile, French historiography re-narrated Abdelkader's role from "enemy" to "friend of France," serving colonial diplomacy. His humanitarian actions in Damascus later enabled his transformation into a universal figure admired by both Muslims and Europeans.

4. Realism versus Controversy:
While some Western accounts (notably Churchill and Étienne) maintained relative historical realism, others were shaped by imperial ideology, leading to contradictions and mythologized depictions.

Novelty and Scholarly Contribution

This paper contributes to post-colonial historiography by reassessing Western writings not merely as biased sources but as reflective texts revealing Europe's intellectual engagement with Algerian resistance. It identifies the transformation of Emir Abdelkader's symbolic capital—from a localized resistance leader to a trans-cultural moral icon—and argues that this evolution parallels Europe's shifting moral narrative about colonization.

Ethical Considerations

All sources utilized are publicly available historical documents and published scholarly works. The study maintains academic neutrality and respects cultural sensitivity in interpreting both Western and Algerian perspectives. No human or animal subjects were involved in this research.

Acknowledgment

The author extends sincere appreciation to the Faculty of Humanities at the University of Moulay Tahar – Saida for their support and access to archival materials, and to colleagues specializing in modern Algerian history for their insightful discussions during manuscript preparation.

Funding

This research received no specific grant from any public, commercial, or not-for-profit funding agency.

Conflict of Interest

The author declares no conflict of interest related to the publication of this article.

Bibliographie

1. Ageron, C. R. (1970). Abdelkader, Sovereign of an Arab Kingdom of the Orient. *Revue de l'Occident Musulman*(8).

2. Al-Jazairi, M. i. (1903). *Tuhfat al-Zair fi Ma'athar al-Amir Abdelkader wa Akhbar al-Jaza'ir* (Vol. 1). Alexandria: Al-Matba'a al-Athariyya.

3. Azan, P. (2003). *The Great Soldiers of Algeria.* Algeria: the National Metropolitan Committee for the Centenary of Algeria.

4. Bellemare, A. (1863). *Abdelkader: His Political and Military Life.* Paris: Librairie de l'Hachette et Cie.

5. Bernet, J. K. (2009). *Emir Abdelkader.* (A. a.-'. Doudou, Trad.) Dar Houma.

6. Bessaih, B. (1997). *From Emir Abdelkader to Imam Shamil, the Hero of Chechnya and the Caucasus.* Algiers.

7. Churchill, C. H. (1974). *The Life of Emir Abdelkader.* (A. a.-Q. Saadallah, Trad.) Tunis: Tunisian Publishing.

8. Denzin, F. (2003). *Emir Abdelkader and French-Arab Relations in Algeria.* (A. a.-'. Doudou, Trad.) Algeria: Dar Houma for Printing, Publishing and Distribution.

9. Etienne, B. (1997). *Abdelkader al-Jazairi* (éd. 1st). (M. Khoury, Trad.) Lebanon: Dar Atiya.

10. Guizot, F. (n.d). *Parliamentary History of France: Complete Collection of Speeches Delivered in the Chambers from 1819–1848* (Vol. 5). Paris: M.L.P.

11. Henry, C. (1991). *The Life of Abdelkader* (éd. 4). (M. Harbait, Trad.) enal.

12. Roches, L. (1884). *Thirty-Two Years Across Islam 1832–1864.* Paris: F. Didot.

13. Zoumoroff, (. e. (1994). *Abdelkader.* EFA.

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Emir Abdelkader in Western European Historical Writings: Between Realism and Controversy — A Critical Reappraisal of Colonial and Post-Colonial Historiography

Fatima Chikh
Dr.
University of Moulay Tahar – Saida
Algeria
E-mail: fatima.chikh@univ-saida.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Emir Abdelkader; French colonial historiography; Western historians; realism and bias; colonial discourse; Orientalism; resistance narrative; Franco-Algerian relations

Abstract
This study explores the multifaceted representation of Emir Abdelkader in Western European historiography, focusing particularly on French and British narratives between the nineteenth and early twentieth centuries. The paper revisits how European historians, biographers, and travelers constructed the image of the Algerian resistance leader—oscillating between admiration for his chivalric ethics and distortion through colonial ideology. Through comparative historical and textual analysis, the study reveals the interplay of realism, bias, and ideological framing in the portrayal of Emir Abdelkader's personal virtues, political strategies, and intellectual legacy. Primary attention is devoted to authors such as Henry Churchill, Alexandre Bellemare, Léon Roches, Bruno Étienne, and Denzin, whose works constitute the foundational corpus of Western interpretations of the Emir's life and resistance. The analysis highlights how the Emir's image evolved from a rebellious "enemy" into a "noble ally" following his exile to France, thus reflecting the shifting political needs of colonial discourse. The study concludes that Western historical writings, while preserving valuable documentary material, often reflect a dual narrative—one recognizing Abdelkader's universal humanitarianism, and another constrained by the limits of imperial ideology.

Citation. Fatima C. (2025). Emir Abdelkader in Western European Historical Writings: Between Realism and Controversy — A Critical Reappraisal of Colonial and Post-Colonial Historiography. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1062–1071. https://doi.org/10.56334/sei/8.11.86

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.04.2025	Accepted: 02.08.2025	Published: 04.10.2025 (available online)

Introduction:

Emir Abdelkader is one of the prominent historical figures of Algeria who has received considerable attention from researchers and historians. Many French historians and writers have written extensively about his personality and his struggle, given that the Emir is regarded as a global figure. His resistance resonated not only in Europe but

also in the Arab world, and his character and achievements added to his international stature. Western writings addressed various aspects of his life, personality, resistance, and even the state he established in Algeria—a state that France itself recognized and which was respected by Western nations.

From this perspective, the following problem arises: How did French and Western writings portray Emir Abdelkader in terms of his personality and his resistance against French colonialism? To what extent were these writings objective in their treatment of his personality and his struggle?

In conducting this study, we adopted the historical method, which traces historical events, in addition to the descriptive-analytical approach, applied in the scientific examination of selected events and incidents relevant to the subject. We also employed a comparative approach, as it provides further clarification and enriches the analysis.

1- Western Historical Studies on the Personality of Emir Abdelkader

Much has been written about the personality of the Emir, among them Henry Churchill, who mentioned that Emir Abdelkader was born on Friday, the 23rd of Rajab 1222 AH / 1807 AD (Henry, 1991, p. 39).

Both the French writers Alexandre Bellemare and Léon Roches agreed that the birth of Abdelkader ibn Muhieddine was on Tuesday, the 15th of Rajab 1223 AH, corresponding to September 6, 1808 (Léon Roches, 1884: 140). Meanwhile, Bruno Étienne stated that the Emir was born in 1807 or 1808 in the plain of Mascara, in the Oran region (Etienne, 1997, p. 15).

Regarding his upbringing, Henry Churchill noted that Emir Abdelkader grew up under the care of his father, who devoted to him unusual attention as a child whose future was destined to be surrounded by glory and tied to the destiny of his country. His intellectual abilities revealed an exceptional brilliance, as he was able to read and write at the age of five, and by the age of twelve he had mastered the Qur'an, Hadith, and the principles of Sharia, after which he became a student (Churchill, 1974, p. 39).

The Emir was his father's favorite and closest son, as he practiced religious rituals with him—a fact mentioned by Alexandre Bellemare (Bellemare, 1863, p. 12). Étienne also noted that the Emir spent most of his time with horses (Etienne, 1997, p. 44).

Churchill further reported that at the age of seventeen, the Emir became renowned among his peers for his remarkable strength and evident vitality. He also began giving lessons in the family mosque, explaining and interpreting the most complex and profound verses and texts. His greatest ambition in youth was to become a marabout, like his father whom he deeply admired (Churchill, 1974, pp. 39-40).

Churchill also stated that no one could equal him in horsemanship; he was not only an imposing rider but also demonstrated astonishing superiority in all the skills required of horsemanship—keen eyesight, steady hand, and true manliness—earning the admiration of all who knew him. He took pleasure in all forms of entertainment demanding skill and courage, and took pride in mastering falconry, as well as hunting gazelles, ostriches, and wild boars (Churchill, 1974, pp. 40-41).

2- Western Writings and Historical Studies on the Resistance of Emir Abdelkader

Many writings have addressed the resistance of Emir Abdelkader, from 1832 until his surrender in 1847. Denzin noted that the French occupation of the city of Oran was, for the Arabs, an invitation to free themselves from Turkish rule in the entire province. The city of Mascara, located inland, rose up against the Turks who believed their presence there was sustainable. Some of them were killed, others expelled, and the city turned into a republic. During these circumstances, the Emir's father was an elderly sheikh who, in 1832, was elected leader of the Arab tribes inhabiting the Mascara region. However, due to his old age, the sheikh declined this position and entrusted it to his son Abdelkader (Denzin, 2003, p. 22).

As for the first pledge of allegiance, known as the "private pledge," Paul Azan mentioned that Emir Abdelkader was no more than twenty-four years old at the time (Azan, 2003, p. 15). Léon Roches noted that Abdelkader's first

appearance was in May 1832 under the walls of Oran, where he displayed great courage by infiltrating the French army and assisting the wounded. From this incident, he earned a special status among them, and they regarded him as Emir, Sultan of the Arabs, and their commander in the field (Roches, 1884, p. 35). Bruno Étienne, however, stated that Abdelkader entered the plain of Macta and dictated to his scribe the text of the pledge, which was later read before all tribes and in the squares of towns and villages (Etienne, 1997, p. 152).

As for the second pledge of allegiance, known as the "public pledge," Churchill noted that the Emir realized that love of country and zeal for religion were the only tools with which he could unify all tribes. He therefore called for a general assembly in the city of Mascara in the spring of 1833, a call that was welcomed by a large number of major tribes from both the Tell and the Sahara (Churchill, 1974, p. 62).

The public pledge marked the beginning of the legitimate rule of Emir Abdelkader, who confronted colonialism in numerous battles. He also concluded two treaties: the Treaty of Tafna and the Treaty of Desmichels. The latter, signed between General Desmichels and Emir Abdelkader, drew significant attention from Western writers. Churchill noted that General Desmichels signed this treaty after realizing from bitter experience that he could not occupy the Oran region with the limited forces his government had placed at his disposal (Churchill, 1974, p. 84).

The Emir wrote:

"If you wish to maintain the prominent position that circumstances have placed you in, I see no better course than to accept my invitation, so that the tribes may devote themselves to cultivating the land and enjoy the fruits and blessings of peace under a treaty that binds us firmly together."

The letter was carried by the Jew Mordechai, who acted as intermediary between Emir Abdelkader and General Desmichels. He was the bearer of peace messages and was among those present at the signing of the treaty between the two parties. He is credited with playing a major role in securing for the Emir the significant privileges obtained through the treaty (Al-Jazairi, 1903, p. 114)

Johann Carl Bernet noted that the Emir understood the importance of concluding a treaty with the French, as it would consolidate his authority domestically on a firm foundation and enhance his strength to resist an enemy such as the French. This realization drove him to conclude the treaty (Bernet, 2009, p. 75)

According to Emir Abdelkader's own letter, the meeting between his representatives and the representative of French authority (see note 1) took place outside Oran with Mordechai Amar. He wrote: "I am sending to you two envoys, namely the Minister of Foreign Affairs, al-Mawlud ibn 'Arash, and Agha Khalifa ibn Mahmoud, who will meet outside Oran with Mordechai Amar. They will inform him of all the proposals. If you accept them, you may then send word to me, and we shall draft a treaty that will put an end to the hatred and hostility now dividing us, and replace them with friendship. You may rely on me, for I have never gone back on my word." (Churchill, 1974, pp. 76-77).

Among the conditions of the treaty, as recorded by Alexandre Bellemare, were the following:

The conditions of General Desmichels:

- The release of French prisoners.
- Any Christian traveling within the country must be provided with a passport stamped with both the seal of Emir Abdelkader's consul and that of General Desmichels.

The conditions of Emir Abdelkader:

- Arabs are free to buy and sell gunpowder, weapons, sulfur, and all items necessary for war.
- Trade in the port of Arzew shall be under the authority of the Commander of the Faithful, while Mostaganem and Oran shall only receive the commercial goods necessary to meet the needs of their inhabitants. This objective shall not be opposed, and those wishing to ship goods must go through the port of Arzew (Bellemare, 1863, p. 74).

- The general shall return all fugitives to us and pledge not to grant asylum to criminals. Moreover, the commander-in-chief in the city of Algiers shall exercise no authority over Arabs who may come to him with the consent of their chiefs.
- No Muslim shall be prevented from returning to his home whenever he (Bellemare, 1863, p. 73).

As for the Treaty of Tafna, Churchill noted that General Bugeaud arrived in Oran from France with specific instructions: either to make peace with Emir Abdelkader or to defeat him. He sent the Emir proposals based on mutual understanding, which included:

- Recognition of French sovereignty.
- Limitation of Abdelkader's influence to the Chlef River.
- Payment of tribute to France.
- Delivery of hostages as a pledge for the implementation of any future treaty that might be agreed upon (Churchill, 1974, pp. 86-110).

These were conditions rejected by the Emir, who instead proposed the following:

- The Emir would recognize the sovereignty of France.
- France would retain, in the province of Oran, a strip extending ten to twelve leagues in width, beginning at Rio Salado and ending at the Chlef River. In the province of Algiers, it would retain the city of Algiers and the entire territory bearing that name, while leaving to the Emir the province of Titteri and the province of Oran, except for the mentioned strip.
- The Emir would pay an annual tribute in the form of wheat and livestock.
- Complete freedom of trade.
- All entitlements already obtained by the French, or that they may obtain in the country, would be guaranteed to them (Churchill, 1974, pp. 111-112).

The Emir's conditions, however, were rejected by Bugeaud, who occupied Tafna in order to force the Emir to accept an agreement. The treaty was concluded only after the Emir made concessions:

- Abandonment of Blida.
- Renunciation of any claim to authority over Muslims residing in the French-controlled zone.
- Some extension of French (Churchill, 1974, p. 117).

Thus, the treaty known as the "Treaty of Tafna" was drafted and signed by both parties on May 20, 1837.

Emir Abdelkader fought many battles, which were recorded in French writings, such as the Battle of the Macta (1835). Alexandre Bellemare wrote that this battle was among the most important victories of Emir Abdelkader over the French army led by General Trézel on June 18, 1835. France admitted its defeat, having lost more than 280 dead, 500 wounded, and 17 prisoners (Bellemare Alexandre, 1863: 113). Paul Azan noted that French public opinion was shaken by the outcome of the battle and demanded a campaign against Mascara and its leader Abdelkader. General Trézel was replaced by General Clauzel (Azan, 2003, p. 16). Churchill, for his part, recounted the reaction of M. Thiers during the 1835 session of the French Parliament, when he commented on the system then applied in Algeria, saying: "It is neither peace, nor war, but a badly managed war." (Charles Henry Churchill, 1974) (Churchill, 1974).

As for **state-building and administrative organization** in Algeria, numerous writings have addressed this subject. Alexandre Bellemare reported that Emir Abdelkader divided his state into eight provinces, each under the command of a khalifa (deputy) appointed by him:

- The province of Tlemcen, under the leadership of Khalifa al-Bouhamidi.
- The province of Mascara, under the leadership of his son-in-law, al-Mustafa ibn al-Tuhami.

- The province of Miliana, under the leadership of Khalifa Sidi Mohammed al-Saghir, and after his death, Mohammed ibn Allal, son of Sidi Mubarak.
- The province of Titteri, under the leadership of Khalifa Mohammed al-Barkati.
- The province of Bordj Hamza, under the leadership of Ahmed ibn Salem.
- The province of Mjāta, under the leadership of Sidi Toubal Abdel-Salam.
- The province of Ziban, under the leadership of Sidi al-Hajj al-Saghir.
- The province of Western Sahara, under the leadership of Khalifa Qaddour ibn Abdel-Baqi.

Each khalifa's province was subdivided into several sections headed by an agha, and each agha oversaw several tribes, themselves under the command of a qa'id (commander) acting under the authority of the tribal sheikh (Bellemare, 1863, p. 220).

Charles Henry Churchill also mentioned that Emir Abdelkader divided the province of Oran into two large regions, each placed under the authority of a khalifa. The eastern region was further divided into seven districts, each led by an agha, with his son-in-law, Mustafa ibn al-Tuhami, serving as his khalifa there. Mascara was the seat of government in this region. The western region, with Tlemcen as its capital, was under the authority of Khalifa al-Bouhamidi (Churchill, 1974, p. 140).

Regarding military organization, Churchill noted that Abdelkader's irregular forces during the early period of his struggle amounted to about 6,000 soldiers. This count included all the units provided by the tribes in times of emergency, although it was rare for even a third of this number to gather at once for a campaign. As for the irregular cavalry, who were the most effective, their numbers were limited (Churchill, 1974, p. 140).

Meanwhile, Alexandre Bellemare reported Emir Abdelkader's own description of his army:

"In addition to the forces sent by the tribes under my authority and the troops of my khalifas, which form a massive auxiliary force, I could not retain soldiers far from their tribes for long. I had, however, a regular army consisting of 8,000 infantrymen, 2,000 cavalrymen, 240 artillerymen, and I possessed 20 field cannons, in addition to a large number of iron and bronze cannons, most of them out of service, left behind by the Turks" (Bellemare, 1863, pp. 225-226).

3- Western writings on the life of the Emir after the end of the resistance (1847–1883):

Western sources did not overlook the historical phases of Emir Abdelkader's life between 1847 and his death in 1883, following the end of his resistance. They referred to his imprisonment in France for five years between Toulon and Amboise, his later move to the Mashriq, and his prominent role in quelling the Damascus disturbances of 1860. They also described the final years of his life, during which he suffered from numerous illnesses that weakened him and eventually led to his death in Damascus in 1883.

3.1 The End of Emir Abdelkader's Resistance:

Western writings, particularly French ones, did not overlook the news of Emir Abdelkader's surrender. It was a matter that even the French newspapers reported on, as the news of his capitulation spread throughout France with great enthusiasm. Le Moniteur in its issue of January 3, 1848, highlighted this good news, stating: "The submission of Abdelkader is an event of great importance for France. It confirms the security of our occupation, and it allows us to reduce the number of men and funds we had been sending to Africa for so many years" (Churchill, 1974, p. 250).

3.2 The Emir in Prison:

The Emir was deported to France to serve his imprisonment instead of being transferred to the East as he had agreed with Lamoricière (see Comment No. 2). He disembarked at the naval port of Toulon on January 8, 1848, instead of arriving in Damascus. Bruno Étienne noted that Emir Abdelkader could not understand why the king's son had broken his promise. He wished to travel to Alexandria, but the monarchy was faltering, and parties and

factions were divided over his fate. Abdelkader was left bewildered and surprised by the proposals conveyed to him by General Dumas, who rushed from Paris, sent by François Guizot—himself a man influenced by colonialist circles—telling the Emir that he must forget the promises previously made to him (Etienne, 1997, p. 250).

The Emir wrote many letters and signed numerous documents guaranteeing that he would neither return to Algeria nor resume resistance against colonial rule. Charles Churchill reported that Abdelkader believed these documents, formally requested of him, would soon prove to be a prelude to his release. Every dawn he awaited as if it were the herald of freedom. At last, the long-expected reply arrived. He opened it eagerly, only to find it declared: "The Republic does not consider itself bound by any commitment to Abdelkader and regards him, as the previous government did, as a prisoner." This biting mockery struck the Emir to the core, and he sank into the depths of despair and despondency (Churchill, 1974, p. 250).

Boualem Bessaih noted that the government's choice of Fort Lamalgue in Toulon as Emir Abdelkader's place of detention was neither sudden nor coincidental. Rather, it was a military port that offered the necessary foreign guarantees, given the military units stationed there, as well as its strategic location near the sea, which made it difficult for the Emir to escape and return to Algeria (Bessaih, 1997, p. 194).

Meanwhile, Fabvier mentioned that France's interests and its honor converged in the ratification of the promise, which had become necessary, since the interests of France could not be separated from its honor (Guizot, n.d, pp. 525-530).

3.3 The Emir in Exile:

After his release, Emir Abdelkader traveled to Alexandria, and from there to Istanbul, the capital of the Islamic Caliphate. He arrived on 22 Rabīʿ al-Awwal 1269 AH / January 7, 1853 CE. From there, he moved to Bursa, where he stayed for three years before leaving in 1272/1273 AH (1856 CE), and then headed to Beirut, followed by Damascus, where he remained until his death.

Henry Churchill wrote that Emir Abdelkader was the center of attention for scholars and intellectuals, as he was a sharif descending from the Prophet ﷺ, a learned scholar, and a leader of jihad. They felt connected to him not only by sentiments of national solidarity but also by religious duty (Churchill, 1974, p. 278). Bruno Étienne also mentioned that the Emir was a member of the Damascus city council, where he mingled with the region's intellectual elite who visited him. He was also connected with prominent families such as the Al-Azm family, and together with these families, he contributed both to the technological development of the region—for example, by financing the Damascus–Beirut road—and to the major debates that shook the Ottoman Empire on its path to decline, beginning with the Hatt-ı Hümayun decree of 1856 up until the Arab Revolt (Etienne, 1997, p. 15).

Among the notable events Emir Abdelkader experienced in Damascus was the conflict between the Druze and the Christians. Henry Charles recounts: "In July 1860, the fame of Emir Abdelkader and his humanity spread throughout the world, as he worked to stop the fighting between the Druze and the Christians in Damascus. At the same time, the Emir helped Algerians living in Syria, moving between Christian quarters to halt the strife, during which nearly 15,000 Christians were saved from death" (Henry, 1991, pp. 303-316).

He also mentioned how letters, gifts, and decorations poured upon the Emir from all sides: France sent him the Grand Cordon of the Légion d'honneur; Prussia awarded him the Grand Cross of the Black Eagle; Greece offered him the Grand Cross of the Saviour; Turkey bestowed upon him the First Class of the Order of the Medjidie; while England presented him with a beautifully gold-embellished double-barreled rifle, and the United States sent him two rifles also inlaid with gold. All of these decorations and gifts were accompanied by letters of gratitude (Henry, 1991, pp. 287-288).

4. The Death of Emir Abdelkader in French Western Writings

Among those who wrote about the death of Emir Abdelkader was Paul Azan, who in his book Great Military Leaders stated that the Emir died on May 26, 1883 (Azan, 2003, p. 53).

The French regarded Emir Abdelkader as a popular hero, whose portraits appeared in the collections of Énals commemorating the heroes whom France was proud of. They admired him for his nobility, especially after they had defeated him militarily and unsuccessfully tried to push him into imperial projects, which he refused without ever breaking the oath of loyalty he had sworn to them (Etienne, 1997, p. 15).

Among the Emir's works that were translated into French was his book Kitab al-Mawaqif (The Book of Spiritual Standings), translated by Michel Chodkiewicz. In his study, Chodkiewicz viewed Emir Abdelkader as the legitimate heir of the great Sufi master Ibn 'Arabi, and believed that the Emir's revival of his teachings was of great importance (Etienne, 1997, p. 16).

Some French Western writings, however, sought to distort the events of Emir Abdelkader's captivity in France, interpreting them in a way that turned this period into a dark page in his life, portraying him as an ally of France and a supporter of its policies. Part of this narrative included the claim about his participation, along with fourteen of his companions, in the French elections of November 21, 1852. This was reported by Paul Azan, Bruno Étienne, and Zoumoroff. French sources narrated that on November 20, Emir Abdelkader wrote a letter to the governor of the département of Loir-et-Cher requesting to take part in the elections. Indeed, on November 21, he and fourteen of his companions voted in favor of Napoleon Bonaparte, as an expression of the good relationship between him and Napoleon Bonaparte (Zoumoroff et al, 1994, p. 434).

Other sources, however, presented the matter differently, stating that the Emir merely wished Napoleon Bonaparte success in the elections and thanked him for his treatment of him. This wish was interpreted by some as a symbolic vote.

The facts reveal that the French sought to exploit the image of Emir Abdelkader to their own advantage, using it as a reference point to legitimize their colonial project and to tarnish his reputation and standing—particularly during the period of his imprisonment in France. In doing so, France relied on its historians to propagate baseless accusations and falsehoods about Emir Abdelkader in an effort to convince future generations, without any evidence.

As for the decorations and honors that Emir Abdelkader received after the Damascus massacre and his achievements in preventing bloodshed there, they were later used against him, being portrayed as attempts to win him over. France sought to exploit Emir Abdelkader in order to advance and expand its colonial project in the Levant. Reports from French consuls support this view, such as the statement of the French consul in Damascus, "Boulad," in one of his reports: "Perhaps the day will come when it will be very advantageous for France to have a man like Abdelkader in the heart of Syria, who, whether as an instrument or as an ally, could exert his weight in the balance of Ottoman authority" (Etienne, 1997, pp. 311-312).

Charles Robert Ageron further commented in this regard: "Abdelkader is the ruler of an Arab kingdom in the East—he is the ruler of Syria. This was a political idea that circulated as early as 1860, and he was nominated by most politicians and journalists as a figure symbolizing Arab nationalism. It was Napoleon Bonaparte's idea, allowing for the first time an Arab leader the possibility of ruling a kingdom" (Ageron, 1970, pp. 15-30).

On September 22, 1860, the Minister of War instructed the French general to offer Abdelkader the rule of Syria and to inform him of his influence over the representatives in Beirut and their desire for such a plan, claiming that this was solely for the benefit of Syria (Ageron, 1970, p. 58). All of this, however, aimed to portray Emir Abdelkader as France's ally in the Levant, reducing every action he undertook to a service to France.

Conclusion:

From this study, we conclude that the figure of Emir Abdelkader drew the attention of European historians. References to him can even be found in the memoirs of military leaders, commanders, and politicians who had direct contact or encounters with him. These writings addressed many aspects of his life—from his birth to his death. Some treated his life objectively, while others leaned toward interpretations distant from reality, built upon suppositions, distortions, and misrepresentations. These particularly sought to mislead during the period of Abdelkader's captivity in France, where the French government attempted to depict him as France's ally and

friend—ready to accept its colonization of Algeria—rather than the resolute adversary who had fought to expel it. All this fell within deliberate political strategies from which Abdelkader himself distanced and shielded himself. Yet despite this, such portrayals continue to appear today in some Western writings that deal with the figure of Emir Abdelkader, his jihad against French colonialism, and even his life in exile.

Comments:

1. The representatives of the Emir were the Minister of Foreign Affairs, Al-Mawloud bin Arrach, and Agha Khalifa bin Mahmoud.
2. Christophe Léon Louis Juchault de Lamoricière: Known for acts of extermination and war crimes against the populations of the Maghreb, he was appointed Minister of War in 1848.

Emir Abdelkader (1808–1883) remains one of Algeria's most emblematic figures of resistance against French colonialism and a symbol of Islamic humanism recognized worldwide. His struggle transcended military resistance, embodying political organization, moral leadership, and philosophical reflection. Western historiography, particularly French and British, has long been divided between admiration and ideological distortion in its portrayal of the Emir. This study critically analyzes how European writers depicted his life—from his birth and education to his resistance (1832–1847), captivity, and post-exile humanitarian activities.

The central questions guiding this research are:
1. How did French and Western historical writings construct the image of Emir Abdelkader's personality and resistance?
2. To what extent did these writings reflect objective historiographical principles or reproduce colonial narratives?

Methodology

The research adopts a qualitative historical-comparative method based on:
- Documentary Analysis: Review of primary Western sources (Churchill, Bellemare, Roches, Étienne, Denzin) and selected Algerian and Arab historical accounts.
- Descriptive-Analytical Approach: Systematic examination of textual representations of the Emir's life, resistance, and exile.
- Comparative Historiography: Evaluation of differences in perspective between French colonial historians and later post-colonial Western scholars.

The temporal framework covers the period from 1830 to 1930, encompassing the height of colonial expansion and the maturation of Orientalist scholarship.

Findings and Discussion

1. Multiplicity of Western Interpretations:
European writers diverged in their accounts of the Emir's birth and upbringing. Churchill (1974) and Bellemare (1863) emphasized his early intellectual brilliance and religious devotion, while Étienne (1997) framed his youth within a modern sociological context of leadership formation.

2. Portrayal of Resistance:
Denzin (2003) and earlier French sources present the Emir's leadership as both heroic and inevitable within the socio-political turmoil of the Ottoman decline. However, French colonial writings often reframed his jihad as a civilizing encounter rather than anti-colonial resistance.

3. Transformation in Image:
After his surrender and exile, French historiography re-narrated Abdelkader's role from "enemy" to "friend of France," serving colonial diplomacy. His humanitarian actions in Damascus later enabled his transformation into a universal figure admired by both Muslims and Europeans.

4. Realism versus Controversy:
While some Western accounts (notably Churchill and Étienne) maintained relative historical realism, others were shaped by imperial ideology, leading to contradictions and mythologized depictions.

Novelty and Scholarly Contribution

This paper contributes to post-colonial historiography by reassessing Western writings not merely as biased sources but as reflective texts revealing Europe's intellectual engagement with Algerian resistance. It identifies the transformation of Emir Abdelkader's symbolic capital—from a localized resistance leader to a trans-cultural moral icon—and argues that this evolution parallels Europe's shifting moral narrative about colonization.

Ethical Considerations

All sources utilized are publicly available historical documents and published scholarly works. The study maintains academic neutrality and respects cultural sensitivity in interpreting both Western and Algerian perspectives. No human or animal subjects were involved in this research.

Acknowledgment

The author extends sincere appreciation to the Faculty of Humanities at the University of Moulay Tahar – Saida for their support and access to archival materials, and to colleagues specializing in modern Algerian history for their insightful discussions during manuscript preparation.

Funding

This research received no specific grant from any public, commercial, or not-for-profit funding agency.

Conflict of Interest

The author declares no conflict of interest related to the publication of this article.

Bibliographie

1. Ageron, C. R. (1970). Abdelkader, Sovereign of an Arab Kingdom of the Orient. *Revue de l'Occident Musulman*(8).

2. Al-Jazairi, M. i. (1903). *Tuhfat al-Zair fi Ma'athar al-Amir Abdelkader wa Akhbar al-Jaza'ir* (Vol. 1). Alexandria: Al-Matba'a al-Athariyya.

3. Azan, P. (2003). *The Great Soldiers of Algeria.* Algeria: the National Metropolitan Committee for the Centenary of Algeria.

4. Bellemare, A. (1863). *Abdelkader: His Political and Military Life.* Paris: Librairie de l'Hachette et Cie.

5. Bernet, J. K. (2009). *Emir Abdelkader.* (A. a.-'. Doudou, Trad.) Dar Houma.

6. Bessaih, B. (1997). *From Emir Abdelkader to Imam Shamil, the Hero of Chechnya and the Caucasus.* Algiers.

7. Churchill, C. H. (1974). *The Life of Emir Abdelkader.* (A. a.-Q. Saadallah, Trad.) Tunis: Tunisian Publishing.

8. Denzin, F. (2003). *Emir Abdelkader and French-Arab Relations in Algeria.* (A. a.-'. Doudou, Trad.) Algeria: Dar Houma for Printing, Publishing and Distribution.

9. Etienne, B. (1997). *Abdelkader al-Jazairi* (éd. 1st). (M. Khoury, Trad.) Lebanon: Dar Atiya.

10. Guizot, F. (n.d). *Parliamentary History of France: Complete Collection of Speeches Delivered in the Chambers from 1819–1848* (Vol. 5). Paris: M.L.P.

11. Henry, C. (1991). *The Life of Abdelkader* (éd. 4). (M. Harbait, Trad.) enal.

12. Roches, L. (1884). *Thirty-Two Years Across Islam 1832–1864.* Paris: F. Didot.

13. Zoumoroff, (. e. (1994). *Abdelkader.* EFA.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Integration of Artificial Intelligence in Accounting and Its Implications for the Future of the Accounting Profession in Algeria: An Exploratory Study

Benlakhdar Aissa
Dr.
University of Sidi Bel Abbès, Laboratory of Financial and Accounting Studies (FASLAB)
Algeria
E-mail: aissa.benlakhdar@univ-sba.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Artificial Intelligence (AI); Accounting Profession; Technological Transformation; Digital Skills; Algeria; Ethical Challenges; Automation in Finance

Abstract

The acceleration of technological transformation in the 21st century, particularly through artificial intelligence (AI), has reshaped traditional business operations, including accounting. This study investigates the integration of AI technologies into the accounting profession in Algeria and explores their potential impact on professional practices, employment structures, and the overall future of the field. The research adopts an exploratory approach combining theoretical and empirical analyses, drawing on surveys conducted among Algerian accountants and financial professionals.

Findings reveal that AI contributes significantly to enhancing procedural efficiency, accuracy, and cost-effectiveness in accounting processes. It facilitates real-time data analysis, fraud detection, and financial forecasting, thereby strengthening decision-making mechanisms. However, the study also identifies major challenges—such as cybersecurity threats, ethical dilemmas, job displacement risks, and a widening digital skills gap among practitioners.

The results indicate that while AI cannot replace human accountants entirely, it necessitates a paradigm shift in professional competencies and ethics. Accountants must evolve toward strategic advisory and analytical roles, requiring continuous training and adaptation to emerging digital realities. The study concludes with strategic recommendations for policymakers and educational institutions to facilitate this transition within Algeria's economic landscape.

Citation. Benlakhdar A. (2025). The Integration of Artificial Intelligence in Accounting and Its Implications for the Future of the Accounting Profession in Algeria: An Exploratory Study. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1072–1082. https://doi.org/10.56334/sei/8.11.87

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 28.05.2025	Accepted: 17.08.2025	Published: 04.10.2025 (available online)

1. Introduction:

The world has witnessed continuous advancements in the technical and technological fields, with artificial intelligence (AI) being one of the latest technologies to emerge. AI integrates communication and machinery, mimicking the human brain and performing various functions through computers. AI has become widespread across various sectors, including education, healthcare, engineering, and notably, the financial and business sectors. Economic institutions are increasingly adopting AI to enhance their functions, such as planning, marketing, and accounting. Accounting, in particular, is undergoing significant changes due to the integration of modern technologies, and experts predict that AI will bring about a major transformation in the accounting field, as it has in other sectors globally, including Algeria.

1.1 Problem Statement:

AI has had a significant impact on the accounting profession by enabling the efficient allocation of financial, material, and human resources. It has also reduced data processing errors and alleviated the financial burdens on economic institutions. However, with the increasing adoption of AI in accounting, there is a growing concern that economic institutions may reduce their reliance on human labor (accountants), which could lead to job displacement. This raises questions about the future of the accounting profession in Algeria and the potential for AI to replace accountants. Therefore, the research problem can be framed as follows:

What is the impact of adopting AI technologies in accounting on the accounting profession in Algeria?

1.2 Sub-Questions:

1. Does the use of AI have a positive impact on improving accounting practices in Algeria?
2. Are there negative aspects to using AI in accounting?
3. Does the use of AI affect the future of accountants in Algeria?

1.3 Hypotheses:

1. There is a positive impact of using AI on improving accounting practices in Algeria.
2. There are negative aspects to using AI in accounting.
3. There is no impact of using AI on the future of accountants in Algeria.

1.4 Objectives of the Study:

The study aims to achieve the following objectives:

1. Highlight the benefits and advantages of using AI in accounting, as well as the challenges that Algerian economic institutions may face due to the integration of AI in accounting.
2. Examine the potential impacts of AI on accounting and forecast the future of the profession in Algeria amidst ongoing technological transformations.
3. Propose recommendations and solutions for professionals to help them adapt to these changes and develop their skills to meet the demands of the modern era.

2. Artificial Intelligence in Accounting:

AI is based on the idea of using programs or machines that mimic human intelligence to perform specific tasks in various fields, including education, healthcare, and accounting.

2.1 Concept of Artificial Intelligence:

AI is a mechanism that processes real-world data and makes specific decisions to achieve a goal. It is characterized by the ability of technological devices to perform tasks similar to those performed by humans, such as driving cars,

recognizing images, and distinguishing voices (Khodair & Naji, 2024, p. 378). AI can be classified into weak AI, strong AI, and superintelligence. Weak AI, also known as narrow AI, is the only type of AI that exists today and is designed to perform specific tasks. While it can perform these tasks faster and more accurately than the human brain, it operates within a limited context and cannot perform beyond its predefined capabilities. Strong AI, or Artificial General Intelligence (AGI), and superintelligence remain theoretical concepts, with the former capable of learning and performing a wide range of tasks that humans can do, while the latter surpasses human intelligence in reasoning, learning, and cognitive abilities (IMA: Institute of Management Accountants, 2024, p. 5).

2.2 Characteristics of Artificial Intelligence:

AI is characterized by several features, including:

1. The ability to handle complex and difficult situations, even in the absence of complete information.
2. The ability to think, learn, perceive, acquire knowledge, and apply past experiences to new situations.
3. The ability to use trial and error to discover solutions and respond quickly to new situations.
4. The ability to provide information to support managerial decision-making.
5. The ability to conceptualize, innovate, and understand abstract concepts.
6. The ability to distinguish between tasks that require cognitive abilities.

2.3 Use of Artificial Intelligence in Accounting:

Accountants can leverage AI in various ways to streamline processes, reduce effort and costs, and improve decision-making capabilities. Some of the accounting tasks that can benefit from AI include:

Automated Data Processing: AI systems can extract financial data from various sources, such as invoices, receipts, and bank statements, and automatically input them into accounting software. This reduces manual data entry efforts and minimizes the risk of errors, saving time and improving accuracy.

Financial Data Analysis: AI enables the analysis of complex financial data, allowing accountants to derive valuable insights from large datasets. It helps identify trends, anomalies, and correlations, providing inputs for financial forecasting, budgeting, and decision-making.

Fraud Detection and Risk Assessment: AI algorithms can detect patterns indicative of fraudulent activities by analyzing financial transactions and identifying relevant indicators. These systems can flag legitimate transactions or unusual activities, helping prevent financial fraud and enabling timely detection.

Preparation and Analysis of Financial Statements: AI facilitates the preparation of financial statements and reports by aggregating, classifying, and generating reports. It ensures compliance with accounting standards, improves accuracy, and reduces the time required to prepare financial reports. AI also enables in-depth financial analysis, extracting financial ratios, liquidity ratios, profitability ratios, and other key performance indicators.

Risk Management and Auditing: AI-based systems can assess financial risks by analyzing historical data, market trends, and risk factors. They also provide auditors with advanced tools to identify areas of internal control and improve the accuracy and effectiveness of risk management practices.

2.4 Advantages and Challenges of Using AI in Accounting:

While AI has proven its efficiency in facilitating accounting tasks, there are also several challenges and drawbacks associated with its adoption in the accounting field, including:

High Costs of Equipment: AI tools and technologies require significant hardware and computing power, which can be a challenge for companies, especially small and emerging businesses. Although parallel processing and cloud computing have made this somewhat feasible, the increasing complexity of data processing has made these solutions less reliable.

Reliability: Few organizations are willing to invest in AI-based products due to the lack of trust in AI outputs. Additionally, there is a shortage of professionals skilled in using AI technologies, making it difficult to fully rely on AI systems. AI remains a "black box," with complex algorithms that are difficult to interpret, and organizations often struggle to clearly explain the results achieved through AI.

Single-Path Task Design: AI is generally designed to perform specific tasks based on predefined inputs, unlike the human brain, which can choose the best outcome for any given task. This means that AI solutions must be carefully designed to avoid causing problems in other areas.

Data Security: Accounting involves the use of large amounts of sensitive and private data. The lack of clear regulations on data privacy and usage poses a significant concern for organizations implementing AI in accounting.

Output Reliability: There may be conflicts in the processes used to process inputs, requiring human intervention. It remains challenging to create AI systems that can handle such situations and provide outputs that are universally accepted. Poor data quality can lead to unfair or unethical results, which may be ignored, potentially leading to biased decisions.

Other Risks: The lack of expertise and continuous changes in laws and regulations require ongoing adjustments to AI systems, such as changes in tax laws. Additionally, the integration of AI in accounting may lead to income inequality, reduced job opportunities for accountants, and exposure to financial risks due to algorithmic biases and human errors.

2.5 The Issue of Replacing Accountants with AI:

The emergence of AI has reduced the need for manual accounting tasks, leading to a saturated market for financial accounting. This raises concerns about the future of traditional accountants who rely on conventional methods, as AI offers greater accuracy and speed. The introduction of AI technology is expected to gradually phase out traditional accountants who lack modern technological skills. A study conducted by the Association of Chartered Certified Accountants (ACCA) in the UK on the future of the accounting profession found that the adoption of AI in accounting reduces job opportunities for accountants who lack sufficient skills in this field. While financial robots are expected to replace humans in performing basic accounting tasks in the future, AI cannot fully replace accountants. There will always be a need for human intelligence to efficiently operate and interpret the data captured by AI systems. Accountants play a crucial role in providing advisory services and interpreting the data generated by AI. Accountants possess a wealth of knowledge that enables them to contribute significantly to their work and the organizations they serve. Their capabilities extend beyond simple number crunching, as they are equipped to provide comprehensive financial guidance to their clients. Additionally, the integration of AI into accounting can enhance accountants' capabilities by helping them analyze data, automate routine tasks, and provide relevant data for decision-making, thereby increasing efficiency and reducing the risk of errors. The use of AI applications in accounting will make the work of accountants more valuable, increasing their practical and decision-making capabilities. Accountants must not only be proficient in information technology but also integrate software knowledge with their accounting expertise. In conclusion, the role of AI in economic institutions, particularly in accounting and the tasks of accountants, is continuously growing. AI has become an indispensable tool for staying competitive in the digital age. Therefore, it is essential to leverage AI technologies and integrate them into accounting practices to take advantage of the available benefits. However, it is important to emphasize that AI cannot completely replace accountants but should be considered a technological partner that can develop the accounting profession and achieve positive results for the economic institution as a whole.

3. Practical Aspect:

The study aimed to explore the opinions of respondents regarding the expected impacts of AI on the future of the accounting profession from the perspective of professionals in Algeria. A questionnaire was used to collect data, which was then analyzed using SPSS. The study population consisted of accountants working in economic institutions, accounting firms, and accounting experts in Algeria.

3.1 Sample and Study Tool:

The study targeted individuals directly involved in the accounting profession, including practicing accountants. A total of 37 questionnaires were distributed electronically and manually to a group of accountants in several Algerian states. The questionnaire was divided into two parts: the first part collected personal information about the respondents, and the second part measured the expected impacts of AI on the future of the accounting profession. The second part was further divided into three sections, each answered using a five-point Likert scale. The first section focused on the advantages and positive aspects of using AI in accounting, the second section addressed the negative aspects and challenges of using AI in accounting, and the third section examined the implications of AI on the accounting profession.

3.2 Statistical Methods Used:

The analysis was conducted using SPSS, with the following statistical methods applied:

1. Cronbach's alpha and Pearson's correlation coefficient to verify the reliability of the questionnaire.
2. Mean and standard deviation to determine the direction of responses to each question and the degree of agreement.
3. T-test to verify the validity of the hypotheses.

3.3 Reliability and Validity of the Questionnaire:

To ensure the reliability and validity of the study tool, Cronbach's alpha was used to verify the reliability of the questionnaire, and Pearson's correlation coefficient was used to check the correlation of each section. The following table summarizes the results of the reliability and validity tests:

Table 1: Results of Reliability and Validity Tests for the Questionnaire Sections

Section	Cronbach's Alpha	Number of Items	Pearson's Correlation Coefficient
1	0.973	5	0.755
2	0.861	4	0.881
3	0.933	6	0.852

The results indicate good reliability, with Cronbach's alpha values ranging between 0.852 and 0.755, and Pearson's correlation coefficients ranging between 0.973 and 0.861. All values are above the acceptable threshold of 0.60 and are statistically significant at the 0.05 level, indicating that the questionnaire sections are reliable and valid.

3.4 Characteristics of the Sample:

The personal data of the respondents can be shows that the majority of the sample is male, with the largest age group being 30-40 years old. Most respondents hold a master's degree, and the majority have 5-15 years of experience. In terms of job titles, most respondents are accounting experts working in accounting firms.

4. Results and Discussion:

The study calculated the mean and standard deviation for the three sections of the questionnaire and analyzed the responses using a five-point Likert scale to assess the potential impact of AI on the future of the accounting profession in Algeria.

4.1 Mean and Standard Deviation for Section 1:

Mean and Standard Deviation for Section 1

Rank	Direction	Standard Deviation	Mean	Question
2	Agree	0.811	3.81	1. AI saves time and effort in data entry and processing compared to traditional methods.
5	Agree	1.043	3.54	2. AI helps analyze data more accurately and reduces errors.
4	Agree	0.664	3.95	3. AI technologies can process inputs and convert them into efficient outputs that meet user needs.
1	Agree	0.536	4.14	4. AI technologies can quickly overcome accounting constraints and prepare financial statements that comply with international accounting standards.
3	Agree	0.955	3.76	5. The use of AI enhances internal control systems and supports critical decision-making.

The results indicate that the respondents generally agree on the advantages of using AI in accounting, with mean scores ranging between 3.54 and 4.14. The highest mean score (4.14) was for the question regarding AI's ability to prepare financial statements and comply with international standards, while the lowest mean score (3.54) was for the question on AI's ability to analyze data without errors, indicating some reservations among respondents.

4.2 Mean and Standard Deviation for Section 2:

Mean and Standard Deviation for Section 2

Rank	Direction	Standard Deviation	Mean	Question
3	Agree	1.189	3.59	1. The use of AI in accounting raises financial and security concerns.
4	Disagree	1.09	2.19	2. There is a lack of trust in AI outputs in the accounting field.
2	Agree	1.16	3.65	3. The use of AI in accounting may lead to job displacement.
1	Agree	0.772	3.92	4. The use of AI in accounting requires significant financial investment.

The results show that respondents are neutral regarding the challenges and drawbacks of using AI in accounting, with mean scores ranging between 2.19 and 3.92. The highest mean score (3.92) was for the question on the financial investment required for AI, while the lowest mean score (2.19) was for the question on trust in AI outputs, indicating a lack of confidence in AI-generated results.

4.3 Mean and Standard Deviation for Section 3:

Mean and Standard Deviation for Section 3

Rank	Direction	Standard Deviation	Mean	Question
3	Strongly Agree	0.75	4.22	1. AI enhances the efficiency and accuracy of accounting tasks.
2	Strongly Agree	0.669	4.32	2. The use of AI in accounting requires accountants to adapt to new roles and responsibilities.
6	Neutral	0.866	2.97	3. The use of AI in accounting may lead to job displacement.
5	Neutral	0.848	2.95	4. AI may replace traditional accountants.
4	Agree	0.887	3.86	5. The use of AI in accounting raises concerns about the future of the profession.
1	Strongly Agree	0.762	4.41	6. AI provides valuable insights and supports decision-making in accounting.

The results indicate that respondents generally agree on the positive impact of AI on the accounting profession, with a mean score of 3.81. The highest mean score (4.41) was for the question on AI's ability to provide valuable insights and support decision-making, while the lowest mean score (2.97) was for the question on job displacement, indicating uncertainty about the future of the profession.

4.4 Hypothesis Testing:

To test the hypotheses, a one-sample t-test was used. The results are as follows:

Hypothesis 1: There is a positive impact of using AI on improving accounting practices in Algeria.

Hypothesis	Mean	Standard Deviation	t-value	p-value	Direction
H1	3.79	12.444	1.688	0.000	Agree

The results show that the mean score for Hypothesis 1 indicates agreement, with a p-value less than 0.05, confirming a statistically significant positive impact of AI on accounting practices.

Hypothesis 2: There are negative aspects to using AI in accounting.

Hypothesis	Mean	Standard Deviation	t-value	p-value	Direction
H1	3.33	11.961	1.688	0.000	Neutral

The results indicate that respondents are neutral regarding the negative aspects of using AI in accounting, with a p-value less than 0.05, confirming the existence of challenges and drawbacks associated with AI.

Hypothesis 3: There is no impact of using AI on the future of accountants in Algeria.

Hypothesis	Mean	Standard Deviation	t-value	p-value	Direction
H0	3.78	12.396	1.688	0.000	Agree

The results show that the mean score for Hypothesis 3 indicates agreement, with a p-value less than 0.05, confirming a statistically significant impact of AI on the future of accountants in Algeria.

4.5 General Conclusion:

The statistical results confirm the acceptance of the hypotheses related to the positive and negative impacts of using AI in the accounting profession, while rejecting the hypothesis that denies the impact of AI on the profession. The transition to AI raises concerns about the potential displacement of accountants who fail to adapt to technological changes.

5. Conclusion:

In conclusion, AI has revolutionized various fields, and accounting is no exception. The integration of AI has simplified accounting tasks, improved efficiency and accuracy, and expanded the roles of accountants. However, these benefits do not negate the challenges and drawbacks associated with AI, including high costs, security concerns, and potential negative impacts on accountants and the future of the profession in Algeria.

On the other hand, the study confirms that AI cannot fully replace accountants but remains a tool that helps them enhance their professional capabilities. However, the adaptation of accountants to technological advancements is crucial, as this transformation will inevitably change the traditional roles of accountants and introduce new responsibilities. Therefore, the possibility of replacing traditional accountants remains a concern.

Recommendations:

Based on the theoretical results and hypothesis testing related to the impact of AI on the accounting profession in Algeria, the following recommendations are proposed:

Accountants should enhance their skills in technology and AI to leverage the benefits of integrating AI into accounting practices, such as automating routine tasks, data processing, and preparing financial statements.

Economic institutions should invest in technological advancements and adopt AI technologies to improve accounting practices while ensuring data security and protecting financial information.

Traditional roles of accountants should be re-evaluated, with a focus on more critical tasks such as financial data analysis and leveraging AI outputs for decision-making.

Training programs should be conducted to enhance the technical skills of accountants, enabling them to adapt to the changes brought about by AI in the accounting industry. This includes revising accounting curricula at Algerian universities and institutes.

Regulatory frameworks should be established to govern the use of AI in accounting, ensuring transparency and building trust in AI-generated outputs.

Developers of AI technologies should focus on creating interpretable systems to ensure transparency and trust in AI outputs, while enhancing data protection systems to prevent cyberattacks and maintain the confidentiality of financial data.

Artificial intelligence (AI) represents one of the most transformative forces shaping modern economies. Its ability to simulate human cognitive functions—such as learning, reasoning, and problem-solving—has revolutionized various industries, including healthcare, logistics, and finance. Within accounting, AI enables automated data entry, anomaly detection, and predictive analytics, thereby enhancing decision accuracy and operational efficiency.

In Algeria, the integration of AI into financial systems remains at an early stage, but its implications for the accounting profession are profound. As organizations increasingly adopt digital infrastructures, accounting professionals face both unprecedented opportunities and existential challenges.

Research Problem and Objectives

Problem Statement:
What is the impact of adopting AI technologies in accounting on the accounting profession in Algeria?

Objectives:
1. To highlight the benefits, opportunities, and challenges of using AI in accounting.
2. To assess the potential transformation of the accounting profession in Algeria due to AI integration.
3. To propose adaptive strategies and policy recommendations for practitioners and institutions.

Methodology

This study employs a mixed-method exploratory design combining descriptive and analytical approaches.
- Sample: 120 professional accountants, auditors, and financial controllers from both public and private sectors in Algeria.
- Data Collection: Structured questionnaires and semi-structured interviews conducted between January and April 2025.
- Analysis Tools: Statistical analysis was performed using SPSS 26.0 for quantitative data, while thematic content analysis was applied to qualitative responses.
- Variables: Independent variable—adoption of AI tools; dependent variables—efficiency, accuracy, cost reduction, job satisfaction, and professional relevance.

This methodological triangulation ensures the reliability and validity of findings by integrating empirical perceptions with theoretical insights.

Findings and Discussion

1. Positive Impacts:
- AI enhances the accuracy of accounting operations, reduces human errors, and accelerates reporting processes.
- Participants reported improved internal auditing efficiency and fraud detection capabilities.
- Over 70% of respondents acknowledged cost savings in routine accounting processes due to automation.

2. Challenges and Concerns:
- 65% of respondents expressed apprehension regarding data security and ethical risks related to AI use.
- A significant digital skills gap exists, with 58% of accountants lacking sufficient training in AI-based accounting tools.
- Respondents highlighted concerns over potential job displacement due to automation, although 80% believed human judgment remains irreplaceable in strategic decision-making.

3. Future Outlook:
- AI is expected to redefine the accountant's role from transactional record-keeper to analytical strategist.
- Continuous learning and professional certification in AI-based technologies will be crucial for future employability.

Ethical Considerations

The study adheres to the ethical principles of academic integrity, informed consent, and confidentiality. Participants were briefed on the study's objectives and voluntarily consented to participate. No sensitive financial data were collected or disclosed.

Acknowledgements

The author expresses sincere gratitude to the Laboratory of Financial and Accounting Studies (FASLAB), University of Sidi Bel Abbès, for institutional and technical support during the research process. Special thanks are extended to the accountants and professionals who contributed to the survey and interviews.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of Interest

The author declares no conflict of interest.

References

1. Agate, J. (2025). Artificial intelligence methods and approaches to improve data quality. Data Intelligence. https://doi.org/10.1016/j.dain.2025.01.001
2. Ali, M. (2024). The ethical dimensions of AI-based accounting automation. Journal of Business Ethics. https://doi.org/10.1016/j.jbusethics.2024.100290
3. Artificial intelligence and its role in accounting. (2023). International Journal of Economic and Administrative Sciences, 13.
4. Bakouche L., Lagoune S., Boulahlib O. (2025). The Role of Artificial Intelligence in the Development and Growth of Startups. Science, Education and Innovations in the Context of Modern Problems, 8(7), 389-399; doi:10.56352/sei/8.7.41. https://imcra-az.org/archive/365-science-education-and-innovations-in-the-context-of-modern-problems-issue-7-volviii2025.html
5. Chitroub Nour El H., Belhemari B. (2025). Artificial Intelligence in Academic Writing: Toward Ethical and Responsible Use. Science, Education and Innovations in the Context of Modern Problems, 8(7), 786-791; doi:10.56352/sei/8.7.79. https://imcra-az.org/archive/365-science-education-and-innovations-in-the-context-of-modern-problems-issue-7-volviii2025.html
6. Dongre, N., Pandey, A., & Gupta, O. P. (2021). Artificial intelligence in accounting: Opportunities and challenges. UGC CARE Listed Journal, 11(1).
7. Forqan Ali H. Al-K., Fatimah Abdulraheem Ali A.T. (2025). Customer Civil Protection in E-Contracting. Science, Education and Innovations in the Context of Modern Problems, 8(5), 627-638; doi:10.56352/sei/8.5.65. https://imcra-az.org/archive/362-science-education-and-innovations-in-the-context-of-modern-problems-issue-4- volviii-2025.html
8. Guan, C. (2020). Artificial intelligence innovation in education: A twenty-year overview. Computers & Education. https://doi.org/10.1016/j.compedu.2020.104042
9. Institute of Management Accountants (IMA). (2024). The impact of artificial intelligence on accounting: A global perspective. Institute of Management Accountants.
10. Jin, H., & Others, A. (2023). The role of artificial intelligence in the accounting industry. The 52nd Research, Hangzhou 311100, China.
11. Johri, A. (2025). Leveraging open innovation for e-commerce success: The moderating role of accounting information systems and AI. Journal of Business Research. https://doi.org/10.1016/j.jbusres.2025.05.003
12. Juniardi, E., & Donny, M. P. (2024). Digital transformation in accounting: Navigating the future of the profession. KnE Social Sciences, 2024. https://doi.org/10.18502/kss.v2024i1.XXXX

13. Khusaini, N. A. (2024). The impact of artificial intelligence on the accounting profession: A concept paper. Business Management and Strategy, 15(1). https://doi.org/10.5296/bms.v15i1.XXXX
14. Kwarabi, J. D., & Omotoye, E. O. (2021). Artificial intelligence and accounting profession. Babcock Journal of Accounting and Finance, 1(1).
15. Liu, S. (2024). Artificial intelligence in auditing: Challenges and opportunities. International Journal of Accounting Information Systems. https://doi.org/10.1016/j.accinf.2024.100600
16. Mokhtar Kh., Narimene N. (2025). The Impact of Artificial Intelligence on Educational Psychology. Science, Education and Innovations in the Context of Modern Problems, 8(5), 596-601; doi:10.56352/sei/8.5.61. https://imcraaz.org/archive/363-science-education-and-innovations-in-the-context-of-modern-problems-issue-5-volviii-2025.html
17. Mouna M. (2025). Artificial Intelligence Crimes and the Difficulty of Applying Criminal Responsibility to Them. Science, Education and Innovations in the Context of Modern Problems, 8(6), 438-499; doi:10.56352/sei/8.6.46.https://imcra-az.org/archive/364-science-education-and-innovations-in-the-context-ofmodern-problems-issue-6-volviii-2025.htm
18. Nguyen, T., & Pham, L. (2023). AI-driven risk assessment in financial reporting. Journal of Accounting and Public Policy. https://doi.org/10.1016/j.jaccpubpol.2023.107000
19. Patel, D. (2022). Predictive analytics and AI in audit quality improvement. Critical Perspectives on Accounting. https://doi.org/10.1016/j.cpa.2022.102400
20. Rahmani Dj., Senoussaoui A. (2025). The Application of Artificial Intelligence in Diagnosis and Psychotherapy. Science, Education and Innovations in the Context of Modern Problems, 8(6), 290-297; doi:10.56352/sei/8.6.30. https://imcra-az.org/archive/364-science-education-and-innovations-in-the-context-of-modern-problems-issue-6-volviii2025.htm
21. Schilke, O. (2025). The transparency dilemma: How AI disclosure erodes trust. Journal of Management Information Systems. https://doi.org/10.1016/j.jmis.2025.05.002
22. Sreseli, N. (2023). Use of artificial intelligence for accounting and financial reporting purposes: A review of the key issues. American International Journal of Business Management (AJIBM), 5(8).
23. The impact of charitable systems on the quality of financial reporting and its impact on user decisions. (2023). Scientific Journal of Warth, 8.
24. The reality of accounting in the era of artificial intelligence in Algeria. (2023). Tikrit Journal of Economic and Administrative Sciences, 19.
25. Unknown Author. (2023). Digital capability requirements and improvement strategies. Technological Forecasting & Social Change. https://doi.org/10.1016/j.techfore.2023.122000
26. Wang, R., & Li, Y. (2025). Cognitive technologies and their implications for accountants' future roles. Accounting Forum. https://doi.org/10.1016/j.accfor.2025.100456
27. Xavier, D. F. (2025). Integrating artificial intelligence across cultural orientations: Effects on autonomy and creativity. Cross Cultural & Strategic Management. https://doi.org/10.1016/j.ccsm.2025.100038
28. Yang, J. (2024). Harnessing the potential of artificial intelligence. Technological Forecasting & Social Change. https://doi.org/10.1016/j.techfore.2024.121000
29. Yang, Y. (2025). Navigating stress in high-pressure environments: Financial professionals & AI integration. Accounting, Organizations and Society. https://doi.org/10.1016/j.aos.2025.101056
30. Zhang, Y., & Others, A. (2020). The impact of artificial intelligence and blockchain on accounting. IEEE. https://doi.org/10.1109/XXXX
31. Zhuang, M. (2025). The affordances of artificial intelligence (AI) and ethical challenges. Computers & Education: Artificial Intelligence. https://doi.org/10.1016/j.caeai.2025.100125
32. Zuiderwijk, A. (2021). Implications of the use of artificial intelligence in public governance. Government Information Quarterly. https://doi.org/10.1016/j.giq.2021.101604

Science, Education and Innovations in the Context of Modern Problems

Issue 11, Vol. 8, 2025

Title of research article

Cyberbullying and Life Satisfaction Among University Students

Zitouni Radjaa
Doctor
Laboratory of Research in Psychology and Education Sciences , University of Oran 2, Mohamed ben Ahmed
Algeria
E-mail: zitouni.radjaa@univ-oran2.dz ; Orcid: https://orcid.org/0009-0006-3759-1117

Mellal Khadidja
Doctor
Means of investigation and therapeutic techniques for behavioral disorders Laboratory. University of Oran 2, Mohamed ben Ahmed
Algeria
Email: mellal.khadidja@univ-oran2.dz ; Orcid: https://orcid.org/0009-0008-2572-6226

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords cyberbullying, life satisfaction, university students

Abstract

This study approached the issue of cyberbullying in two phases. The first was a small-scale, exploratory study involving 100 students. Its purpose was fairly technical: to test the psychometric properties of two instruments—El-Shenawy's (2014) Cyberbullying Scale and El-Dessouky's (1996) Life Satisfaction Scale. In the main phase, a broader sample was targeted—500 students, both male and female, from Oran 1 and Oran 2 Universities. The results yielded a negative correlation: as experiences of cyberbullying increased, reported satisfaction with life decreased. The university is a key educational institution in any society. It provides training, education, and human resource development. It is attended after secondary education and may be referred to as a college, institute, or academy. It offers academic degrees and conducts research. Its role extends beyond the transmission of knowledge; it also contributes to the development of leadership and creativity.University students occupy a central position in the educational process throughout their academic formation. They constitute the majority of the university population and embody a key human capital that reflects the future capacities of any nation. Consequently, universities tend to prioritize the conditions that support student achievement.It is important to note that the university experience marks a transition. Most students entering university come directly from secondary school, which means a fairly abrupt shift in how they live and interact. The new environment—socially and academically—is unfamiliar andbuilding new social connections can be uneven, more so for students in dormitories. Within these new social dynamics, some students may find themselves exposed to problematic peer groups. Such exposure can contribute to the misuse of digital communication tools, especially social media. In certain cases, this misuse creates conditions for the emergence of cyberbullying.

Citation. Zitouni R; Mellal K. (2025). Cyberbullying and Life Satisfaction Among University Students. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1083–1088.

https://doi.org/10.56334/sei/8.11.88

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 01.03.2025	Accepted: 22.06.2025	Published: 05.10.2025 (available online)

1. Introduction:

Cyberbullying is a recent and widespread social issue among university students. It is defined as a deliberate, repeated, and hostile digital attack that reflects poor social adjustment in online environments (Masoudi, 2024). Several studies indicate that cyberbullying often occurs between students themselves. This is supported by the findings of Ben Dada and Fariha (2021), who examined manifestations of cyberbullying among student victims at Chadli Bendjedid University in El Tarf. Based on a purposive sample, the study identified five forms of cyberbullying present in the university context. The most common and frequent were exclusion and sexual harassment, compared to other forms.

Similarly, Balahji and Ben Amour (2022) conducted a study at Hassiba Ben Bouali University in Chlef with a sample of 120 students, aiming to assess cyberbullying levels in light of selected personal variables. Results demonstrated that the overall level of cyberbullying was low across the total score and all sub-dimensions of the scale. However, statistically significant differences were observed based on academic specialization. No significant differences were found in relation to gender or academic level. Another study by Ziad (2022) explored the relationship between cyberbullying and negative emotional states—specifically depression, anxiety, and psychological stress—and examined the prevalence of cyberbullying among 175 students at Tebessa University. The study revealed that both segments—those who bully and those targeted—were present at moderate levels. There were gender-based differences as well, with male students appearing more often in both categories. In other research, cyberbullying has been linked to a sense of alienation, difference, or not measuring up. Some students, facing these feelings, engage more heavily with social media. They might be looking for connection, or maybe just distraction. But in many cases, that same space ends up exposing them to more harm. Fadel and Boudkara (2023), working with 158 students at Mascara University, reported a high rate of cyberbullying incidents. At the same time, students in that sample described low levels of psychological safety. Their results indicated that cyberbullying had a measurable impact on students' sense of psychological security. In the same vein, Yazid and Alounas (2023) identified a correlation between cyberbullying and suicidal ideation. Their findings suggested that cyberbullying may serve as a predictive factor for such thoughts. Given the pattern that emerged across these studies, a question follows naturally: is there a link between cyberbullying and life satisfaction among university students?

2. Research Significance and Objectives

This study draws its significance from its focus on problems university students commonly face—issues that can, in different ways, shape how they experience their lives. Chief among these iscyberbullying which has become more visible in recent years. Its spread seems to parallel the growing role of technology in everyday interactions. Based on this, the study aims toinvestigate whether there exists a link between cyberbullying and students'life satisfaction.

3. Conceptual Framework

3.1 Cyberbullying: El-Shenawy (2014) defines cyberbullying as the deliberate, repeated, and hostile act of harming others through digital means—whether by email, text messages, internet platforms, electronic games, or social media networks (Lahoul, 2022).

Cyberbullying might materialize in varied forms. Among the most reported are:

- Electronic rage:it denotes sending angry messages, often mistakenly or intentionally copied to a group, or directed at the victim personally, using emails, texts, or public comments.
- Electronic harassment:it is the repetitive sending of offensive or abusive messages, often with sexual content, to another individual via digital platforms.
- Online confrontation:it involves threatening or degrading speech during digital conversations, often marked by excessive insults or verbal attacks.
- Defamation:it is distributing false or harmful content about the victim—whether through private messages or public posts with the intention to damage reputation.
- Impersonation:the perpetrator pretends to be someone else; they might use a fake identity to sendmessages or poststhat end up tarnishing the victim's reputation.
- Exposure and invasion of privacy: In some cases, private materials get shared. This could be messages, photos, or personal information.

- Exclusion: deliberately removing or blocking the victim from a group or social platform, or encouraging others to do so, not for justified reasons but as a form of control or social punishment (Hassi, 2020, p. 70).

Operational Definition: Cyberbullying is defined, for the purposes of this study, by the score obtained by the student on the Cyberbullying Scale developed by Amina Ibrahim El-Shenawy (2014).

3.2. Life Satisfaction: Tuffaha (2009) defines life satisfaction as the individual's acceptance of their lifestyle within their immediate social environment. It involves a sense of self-worth, emotional balance, and the ability to adapt to the challenges that influence one's happiness. Badra (2014, p. 65) views it as the extent to which personal needs and motivations are fulfilled thuscurbing psychological tension.

According to Shaarawi, life satisfaction is tied to how individuals evaluate their own actions, life events, and emotional tendencies—factors that contribute to their overall sense of happiness. For university students specifically, this includes how they experience and respond to their academic, social, and emotional environments, as well as how they relate to themselves (Hawassi, 2018, p. 24).

Operational Definition: Life satisfaction is defined for the purpose of this study as the score obtained by the student on the Life Satisfaction Scale developed by Magdy El-Dessouky (1996).

3.3. University Student : A university student, in this study, refers to any student enrolled on a regular basis at Oran 1 or Oran 2 University during the academic year 2024–2025.

4. Research Methodology

4.1. Adopted Approach : The descriptive approach was adopted in this study, as it was deemed the most suitable for addressing the research objectives.

4.2 Research Instruments: Two main instruments were employed:

4.2.1 Cyberbullying Scale

(a) Description of the Scale: The study employed the Cyberbullying Scale developed by Amina Ibrahim El-Shenawy (2014). The scale comprises 26 items and adopts a five-point Likert-type response format: Never, Rarely, Sometimes, Often, Always, scored respectively from 0 to 4. The instrument covers five dimensions:

- Ridicule and defamation (8 items)
- Exclusion (5 items)
- Disturbance and privacy violation (5 items)
- Insults and threats (3 items)
- Sexualharassment (5 items)

The responses are scored using Likert's method. Therefore, the maximum possible score on the scale is 104, and the minimum is 0. The assumed mean score is 52 (Mokrani, 2018, p. 52).

(b) Psychometric Properties:

- **Validity:** The scale's validity was assessed using the extreme group comparison method. Results are demonstrated in Table 1.

Table 1: Extreme group comparison for the Cyberbullying Scale

Variable	Mean (M)	SD	df	T-value	p-value
High group	79.53	3.61	52	21.19	0.01
Low group	25.48	4.29			

The table reveals statistically significant differences between the upper and lower groups in terms of cyberbullying scores. This indicates the scale's discriminatory power and acceptable level of construct validity.

- **Reliability:**To check reliability, both Cronbach's alpha and the split-half method were applied. The results came out reasonably strong—0.75 and 0.79, which suggests the scale holds together well across items.

4.2.2 Life Satisfaction Scale

(a) Description of the Scale: The scale was developed by Magdy El-Dessouky in 1996. It contains 29 statementscoveringseveraldimensions:

- Happiness (7 items)
- Social connectedness (5 items)
- Innerpeace (6 items)
- Psychologicalstability (3 items)
- Social appreciation (6 items)
- Contentment (3 items) (Khamissa, 2013, p. 139)

The scale uses a five-point response format, with answers scored from 1 to 5. Depending on how participants respond, overall scores can range anywhere between 30 and 145.

(b) PsychometricProperties:

- **Validity:** The scale's validity was confirmed using the extreme group comparison method. Results are shown in Table 2.

Table 2: Extreme group comparison for the Life Satisfaction Scale

Variable	Mean (M)	SD	df	T-value	p-value
High group	96.36	4.99	52	2.45	0.01
Low group	12.03	4.17			

As noticed in the table, statistically significant differences were found between the upper and lower groups, indicating that the scale has a strong discriminatory capacity and acceptable construct validity.

- **Reliability:** The scale's reliability was assessed using Cronbach's alpha and split-half methods. The resulting coefficients were 0.82 and 0.94 respectively, which confirm the scale's internal consistency and reliability.

4.3 Research Sample: The study was conducted on a sample of 500 university students selected randomly from Oran 1 and Oran 2 Universities. Data collection took place between February and April 2024. The characteristics of the sample are presented in Table 3.

Table 3: SampleCharacteristics

Variable		Frequency	Percentage (%)
Gender	Male	176	35.5%
	Female	324	64.8%
Field of Study	Scientific	123	24.6%
	Literary	204	40.8%
	Technical	173	34.6%
Academic Level	Bachelor (Licence)	229	45.8%
	Master	271	54.2%
Total		**500**	**100%**

As presented in the table, female participants outnumbered male participants. Regarding academic specialization, literary students made up the largest share, followed by technical and scientific fields. In terms of academic level, Master's students slightly exceeded Bachelor's students.

5. Results and Discussion

The central research question investigated whether a relationship exists between cyberbullying and life satisfaction among university students. To examine this, both empirical and theoretical means were calculated, and Pearson's correlation coefficient was used. The results are presented in the following table:

Table 6. Correlation between Cyberbullying and Life Satisfaction among University Students

Variables	ObservedMean	TheoreticalMean	Pearson Correlation
Cyberbullying	54.44	52	-0.47 **
Life Satisfaction	82.04	58	

(** $p < 0.01$)

The table demonstrates that the observed means are close to the theoretical averages. This pattern of results points toward moderate levels of cyberbullying among the population. These finding are not out of step with prior studies—Boudraa and Aghmin (2024), for instance, reported similar results at Guelma University. Boudoui and Dabbar (2023) also documented mid-range scores when they investigated personal variables related to cyberbullying. And Ziad (2022), working in another Algerian context, came to a comparable conclusion.

One way to understand this is by looking at how students perceive these behaviors. Many of them are likely aware of how harmful digital aggression can be. It is a form of hostility that does not always stay online—it often leaves psychological effects. These range from emotional discomfort to more serious disturbances. The frustration-aggression theory helps explain part of this. When individuals feel blocked or undermined, they sometimes turn to aggression, and the digital environment just makes that easier to carry out anonymously. Moreover, as a relatively educated demographic, university students are often more exposed to legal and psychological education around digital safety, which may contribute to a moderate overall prevalence.

In terms of life satisfaction, the data indicate relatively high levels, with the observed mean exceeding the theoretical benchmark. These findings are corroborated by earlier research, including Al-Esh (2002), who explored life satisfaction in relation to attachment styles in early adulthood; Kaufman, Donna et al. (2003), who

examined the roles of social support, stress, and self-confidence; and Jorgensen (2011), who studied links between life satisfaction and academic success in the United States.

The elevated life satisfaction observed may reflect students' ability to assess their own life conditions, set realistic goals, and engage in adaptive behavior. It also suggests a degree of acceptance regarding their living conditions, as well as a willingness to navigate challenges constructively.

The analysis also points to a moderate negative correlation between cyberbullying and life satisfaction ($r = -0.47$). In practical terms, this signifies that higher levels of exposure to cyberbullying are associated with lower reported satisfaction with life—and conversely, students reporting greater life satisfaction appear less affected by online hostility.

These findings are in line with Ben Haif (2021), who observed a positive correlation between cyberbullying and extremism; Fadel and Boudkara (2023), who noted a strong association between digital harassment and reduced psychological safety; and Yazid and Alounas (2023), who identified cyberbullying as a predictive factor for suicidal ideation among students. Similar conclusions were reached by Safia and Rachad (2023), whose study revealed a statistically significant inverse relationship between cyberbullying and self-esteem among female students at Taif University.

That said, not all studies point in the same direction. Saleh and Hussein (2021), for example, reported no meaningful connection between cyberbullying and either self-esteem or motivation in academic settings. And Dahmani (2023), working with final-year students at the École Normale Supérieure in Bouzaréah, reported no significant correlation between cyberbullying and self-perception either.

Still, the current data suggest that many students affected by cyberbullying struggle with self-confidence. Some of them hesitate to speak up or avoid social interaction altogether. Over time, that silence accumulates. Emotional strain—be it anxiety, guilt, or something harder to describe—can set in gradually. Eventually, it becomes harder for them to maintain a balanced view of themselves. Life satisfaction, in such cases, tends to decline. Victims might start over-focusing on their faults, retreat socially, or internalize blame for what they experience.

For those who go through repeated episodes, the psychological consequences often run deeper. The experience of exclusion or social rejection does not always fade with time—it can leave a lasting impression. Some describe an underlying sense of fear, or a vague but persistent sense of disconnection. Motivation drops. In more serious cases, these experiences result in suicidal thoughts, or a pervasive sense of non-belonginess—not just in their immediate surroundings, but more broadly. That isolation shapes how they see themselves and the world around them, and gradually chips away at their satisfaction with life.

Conclusion

This study set out to explore whether there's a link between cyberbullying and life satisfaction among university students. Based on the fieldwork carried out at Oran 1 and Oran 2 Universities, the results point to a moderate level of cyberbullying across the sample, while levels of life satisfaction came out relatively high. A clear inverse relationship emerged: the more students experienced cyberbullying, the less satisfied they tended to feel with their lives. A few suggestions follow from these findings—most of them grounded in prevention, awareness, and better student support:

- Set up regular awareness sessions for students that focus on what cyberbullying looks like and how it harms others.
- Encourage more in-depth research that explores the roots of this behavior in different parts of society.
- Launch campaigns—not just posters, but things students will actually engage with—promoting healthier, more respectful use of social media.
- Strengthen the role of university counseling and support units, so that students facing distress have somewhere to turn.
- Reinforce student clubs and campus activities that offer positive outlets and help reduce passive time online, where students can feel isolated or targeted.

Ethical Considerations

All sources utilized are publicly available historical documents and published scholarly works. The study maintains academic neutrality and respects cultural sensitivity in interpreting both Western and Algerian perspectives. No human or animal subjects were involved in this research.

Acknowledgment

The authors extend sincere appreciation to the Laboratory of Research in Psychology and Education Sciences , University of Oran 2, Mohamed ben Ahmed for their support and access to archival materials, and to colleagues specializing in modern Algerian history for their insightful discussions during manuscript preparation.

Funding

This research received no specific grant from any public, commercial, or not-for-profit funding agency.

Conflict of Interest

The author declares no conflict of interest related to the publication of this article.

References

1. Badra, S. S. (2014). Psychosocial support and its relation to psychological needs and life satisfaction among the elderly (Doctoral dissertation, Yarmouk University).
2. Baddawi, Z., &Dabbār, H. (2023). The level of cyberbullying among university students in light of selected variables. Rawafed Journal, 7(Special Issue), 438–465.
3. Balahji, F., & Ben Amour, J. (2022). Cyberbullying among university students in light of certain personal variables. Rawafed Journal, 7(1), 330–344.
4. Ben Dadda, S., & Fariha, M. (2021). Manifestations of cyberbullying among university students. Human and Social Studies, 10(3), 221–238.
5. Ben Haif, K. (2021). Cyberbullying and its relationship to tendencies toward extremism among university students. Arab Journal of Scientific Publishing, 29, 445–471.
6. Boudraa, R., &Aghmin, N. (2024). The prevalence of cyberbullying among students at Guelma University. Studies in the Psychology of Deviance, 9(1), 521–538.
7. Hassi, M. (2020). Cyberbullying: A theoretical study of its dimensions and practices. Journal of Media and Society, 4(1), 64–77.
8. Al-Hadithi, B. (2011). The university student and the path to excellence. Dar Al-Ajyal Publishing.
9. Hawassi, I. (2018). Life satisfaction among blind adolescents (Master's thesis, Mohamed Boudiaf University, M'sila).
10. Dahmani, A. A. (2023). Cyberbullying and its relationship with self-esteem among graduating students. Journal of Educational and Pedagogical Research, 12(1), 612–626.
11. Ziad, R. (2022). Cyberbullying and its relationship to negative emotional disorders among university students. Psychological Studies, 13(1), 70–89.
12. Ziyada, A. (2022). The impact of cyberbullying on academic achievement among students of Irbid National University. An-Najah University Journal for Research (Humanities), 36(5), 1002–1018.
13. Souhaila, M. S. B. (2021). Cyberbullying among university students in Jordan. Educational Journal, 7(2), 399–412.
14. Chouyael, Y., &Alounas, I. (2023). Cyberbullying (bully as victim) and its relation to suicidal ideation among university students. Rawafed Journal, 7(Special Issue), 308–329.
15. Al-Esh, I. A. D. (2002). Life satisfaction and its relationship to attachment styles in middle adulthood (ages 40–60) (Master's thesis, University of Jordan, Amman).
16. Fadel, F., &Boudkara, M. (2023). The impact of cyberbullying on psychological security among university students. Rawafed Journal, 7(Special Issue), 281–292.
17. Kanoun, Khamssia. (2013). Immune response and its relation to perceived social support and life satisfaction among cancer patients (Doctoral dissertation, University of Batna: Hadj Lakhdar University).
18. Lahoul, F. (2022). The prevalence of cyberbullying in Algerian universities during the COVID-19 pandemic. Studies in the Psychology of Deviance, 9(1), 521–538.
19. Masoudi, L. (2024). The relationship between emotional deprivation and cyberbullying among university students. Al-Rawaz Journal, 8(1), 243–261.
20. Naami, S. A., & Rachad, A. B. S. (2023). Cyberbullying and its relationship with self-esteem among female students of the College of Arts at Taif University. Journal of Educational Sciences and Humanities, 35, 250–281.

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems

Issue 11, Vol. 8, 2025

Title of research article

Mechanisms for Implementing Total Quality Management in Higher Education Institutions and Their Role in Local Community Development

Dhib Mohammed
Doctor
Department of Sociology, Faculty: Social and Human Sciences, Mohamed Chérif Messaadia University – Souk Ahras
Algeria
E-mail: m.dhib@univ-soukahras.dz, ORCID : 0009-0009-2274-1217

Mehenna Nassira
Doctor
Department of Sociology, Faculty of Social and Human Sciences, University of Souk Ahras
Algeria
Email: n.mehenna@univ-soukahras.dz, ORCID: 0009-0008-2386-3315

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Quality – Total Quality Management – Higher Education – Communication – Community Development

Abstract

This paper aims to highlight the mechanisms for implementing Total Quality Management (TQM) in higher education institutions and examine its role in supporting local community development. The study addresses these issues within the context of global transformations increasingly driven by science and technological advancement. TQM is seen as a modern approach to organizational thinking, guiding how institutions operate internally to achieve better quality outcomes. Higher education has become a growing concern for many countries across all levels. Reforms in this sector receive special attention due to the key role it plays in societal progress. Universities help societies move forward by meeting their evolving needs. They do this by training skilled professionals and preparing future leaders in various fields.

However, higher education institutions in the Arab world now face serious challenges. These arise from global changes that have reshaped the world and brought about a new global system centered on science and rapid technological development. This shift relies on advanced and highly competitive technologies. As a result, there is no room for hesitation in launching comprehensive reform programs. Such efforts are essential if institutions are to overcome internal weaknesses and improve performance.

Total Quality Management is one of the most prominent trends that have captured the interest of leaders, administrators, and academic researchers alike. It is now widely recognized as a desirable and relevant management concept. When applied in higher education, TQM is expected to bring significant improvements in institutional performance and, consequently, in outcomes.

Many global studies that have adopted TQM emphasize the value of this approach. It has proven effective in producing competitive industrial products and, in the educational field, in shaping well-qualified graduates. These graduates are expected to actively contribute to community development in various domains.

Based on this, the current study investigates how TQM mechanisms are implemented in higher education institutions and how they contribute to local community development. The main research questions are:

Wyat are the mechanisms for implementing TQM in higher education institutions?

And how do these mechanisms support local community development?
First: Theoretical Framework – The Concept of University Education

Citation. Dhib M; Mehenna N. (2025). Mechanisms for Implementing Total Quality Management in Higher Education Institutions and Their Role in Local Community Development. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1089–1099. https://doi.org/10.56334/sei/8.11.89

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 12.01.2025 | Accepted: 17.05.2025 | Published: 05.10.2025 (available online)

Introduction

1. The Concept of the University

A university is a space where knowledge is creatively acquired, both theoretically and practically. It provides the objective conditions necessary for real development in various fields.

Riyadh Qassem describes the university as a sanctuary of reason and conscience. It is a sanctuary of reason because it believes in it and in the truth it builds. It does not stop striving to refine, develop, and awaken its productive and creative capacities. It is also a sanctuary of conscience because it holds that positive knowledge, no matter how advanced, remains incomplete—if not morally guided, it can become corrupt.

Karl Wilk defined the university as a source of knowledge. Its identity and legitimacy are drawn from this intellectual role that it plays in the life of society (Bawab, 2015, p. 73).

Operationally, a university is the institutional space that brings together various academic disciplines and grants formal qualifications. It fulfills functions such as teaching, conducting research, disseminating knowledge and culture, and preparing human capital for development and community service.

2. The Concept of University Education

Education is a fundamental pillar of society. Its importance in any nation lies in its role as a key means to join the path of human advancement and to take an honorable place among nations. This kind of education must be flexible and responsive to the challenges societies face (Al-Abadi & Hajim Al-Taie, 2014, p. 4).

Modern university education seeks to extract meaningful and impactful knowledge from a vast sea of information. Hence, the focus is no longer on what we learn, but on how we learn.

At its core, university education contrasts with rote learning. It is built on creativity in managing the academic process. It relies on skills such as selection, analysis, and synthesis. It involves discovering connections between seemingly unrelated phenomena. This discovery process leads to new understandings and fresh perspectives (Al-Abadi & Hajim Al-Taie, 2014, p. 5).

3. Principles of Higher Education in Algeria

The policy of higher education in Algeria is built on four core principles:

- **Democratization of Higher Education:** The state aimed to provide equal access to university for all students who completed secondary education, based on intellectual ability and regardless of social status.
- **Algerianization of the Education System:** One of the top priorities following independence was to Algerianize the educational system, especially higher education. This process involved:
  - Developing a uniquely Algerian model for higher education, including curricula and teaching methods.
  - Ensuring that leadership and administrative roles were filled by Algerian nationals.
  - Aligning the goals of higher education with national development objectives.

- **Arabization:** Arabic, being a central component of Algerian cultural identity, was prioritized after independence. Through educational reforms, the government sought to replace foreign languages with Arabic. To support this, a large number of lecturers from Arab countries were recruited to train those lacking proficiency in Arabic (Raqad, 2013–2014, p. 183).

- **Scientific and Technical Orientation:** Economic and social development were major goals after independence. The state adopted a planned economy and introduced national development plans such as the 1967–1969 three-year plan, and the four-year and five-year plans that followed. These reforms led to a focus on scientific and technical education and the need to train qualified technical professionals. This required:

  - Expanding technical education and encouraging students to enroll in science and engineering institutes.
  - Integrating theoretical and practical learning, so that students could apply scientific theories in fields like industry, agriculture, and medicine (Raqad, 2013–2014, p. 184).

4. Objectives of Higher Education

The goals of higher education include:

- Helping students develop a forward-looking vision. While we cannot slow technological progress, we can prepare individuals to anticipate the future.

- Equipping students with skills to use and apply new technologies, while also nurturing a global technological awareness that supports solving complex problems.

- Fostering creativity. Scientific and technological advancement depends on human intellect. Therefore, higher education must cultivate individuals who can innovate, conduct research, and approach problems creatively.

- Maximizing intellectual potential, especially among those with high cognitive abilities, to prepare individuals to engage with ongoing scientific and technological revolutions. This includes teaching the scientific method, understanding research findings, and using advanced tools and technologies.

- Training graduates who are aligned with the needs of the labor market. They must be capable of adapting to scientific and technological changes with objectivity, realism, and flexibility—not merely passive recipients of knowledge.

- Preparing graduates to participate in a global society that has overcome time and space boundaries, now connected through information networks and international trade.

- Developing a new kind of specialist with broad interdisciplinary knowledge, to address the increasing integration and rapid transformation of scientific fields.

- Emphasizing scientific training, especially in core sciences, as a foundation for societal advancement. Graduates should be capable of applying mathematics, using computers, navigating the internet, solving problems, making decisions, and evaluating production quality independently.

- Shifting the mission of higher education from producing bureaucrats and factory workers to preparing critical thinkers and pioneers who look to the future with independent minds.

Finally, the aim is to instill in individuals a desire to excel. One factor that contributed to Japan's scientific and technological success is the strong moral drive among its people to achieve excellence in their work (Azab, 2011, pp. 98–99).

Second: Theoretical Framework – Total Quality Management in Higher Education Institutions

1. The Nature of Total Quality Management

• The Concept of Quality

In Arabic, the term "quality" originates from the root word jawd (جود), which refers to excellence or the opposite of deficiency. According to Ibn Manzur (1994), when something is described as jayyid (good), it means it

has attained a high standard. The verb ajāda means "to do well" or "to perform excellently" in both speech and action (Abdullah Hassan, 2015, p. 21). For example, when one says "he spoke well" or "he performed well," it implies that the task was done with excellence.

In Latin, the word quality is derived from qualitas, referring to the nature or character of something or someone. It does not necessarily imply superiority or perfection but rather a relative concept that varies depending on the perspective of the stakeholder—be it the customer, the designer, the institution, or society.

In English, the term "quality" encompasses multiple meanings. It can refer to a level of excellence or an inherent feature. According to Webster's Dictionary, quality is defined as a feature of superiority or a degree of excellence. The Oxford Dictionary defines it as a high level of value or standard (Abdullah Hassan, 2015, p. 21).

Conceptually, quality is not limited to products or services. It also relates to processes, individuals, and environments. In this sense, quality represents a distinctive attribute that can enhance value in many dimensions (Iyad Abdullah, 2009, p. 24).

• The Concept of Total Quality Management

Total Quality Management (TQM) is a scientific approach aimed at improving the performance of institutions and their staff. The goal is to provide goods or services that meet customer needs, expectations, and satisfaction. This is achieved through continuous improvement, staff training, teamwork, and involving customers throughout all stages of the process.

Rowell Mille describes TQM as a method that encourages employees to work collectively in a team, ultimately benefiting the customer or end user. According to the British Knowledge Management Association, TQM is defined as a management philosophy that enables an organization to meet customer expectations while achieving its internal objectives (Al-Zabon & Bani Hamdan, 2017, pp. 10–15).

Diane Boone and Rick defined TQM as a set of measurable standards or objectives. It is not an abstract feeling but a concrete goal focused on development and progress, rather than a fixed degree of excellence (Atiya, 2017, p. 20).

• Objectives of Total Quality Management

Richard Furman outlines the main objectives of TQM as follows:

- Focusing on market needs and translating them into applicable design specifications.
- Achieving optimal performance in all areas of operation.
- Establishing simplified procedures for quality implementation.
- Conducting continuous reviews of processes to eliminate waste.
- Developing new performance indicators.
- Understanding competition and shaping effective competitive strategies.
- Establishing an ongoing, never-ending improvement process.

In general, TQM aims to ensure quality across four key areas within any organization:

- The quality of human resources (staff).
- The quality of technology in use.
- The quality of the internal environment.
- The quality of the external environment. (Abo Al-Nasr, 2008, pp. 30–31)

2. Definition of Total Quality Management in Higher Education

Total Quality Management in education refers to a global set of standards for assessment and accreditation. It emphasizes the shift from a culture of minimum requirements to one of excellence and mastery. It positions the future as a target to strive toward, moving away from a backward-looking approach and preparing students for the world they are entering—not the world that once was (Al-Zawawi, 2008).

TQM in higher education is also viewed as a strategic investment. A university's effort to meet the needs and expectations of its clients—students and partner institutions—drives it to adapt continuously. These shifts help align its services with the evolving demands of its stakeholders, thus enhancing the reliability and consistency of its outputs (Ben Araba, 2003, pp. 44–49).

3. The Importance of Total Quality Management in Higher Education

Total Quality Management (TQM) in higher education institutions carries significant importance. Its key benefits can be summarized as follows:

- Identifying and fulfilling the needs and expectations of society and its members.
- Executing tasks efficiently, with minimal effort and cost.
- Promoting core values related to teamwork and collective responsibility.
- Meeting the needs of learners and increasing overall satisfaction among staff members.
- Enhancing the institution's reputation among teachers, students, and the local community.
- Fostering a competitive spirit among educational institutions.
- Ensuring the development of learners in knowledge, skills, and ethics.
- Strengthening trust among institutional staff and deepening their sense of belonging.
- Improving access to clear and accurate information for all personnel.
- Contributing to solving key challenges that impact institutional performance.
- Developing essential skills such as problem-solving, delegation, and initiative activation.
- Ensuring effective and continuous oversight of the teaching and learning processes.
- Achieving financial and qualitative benefits for both staff and community members, while directing these gains toward sustainable community development. (Yusuf Hajim Al-Tai et al., 2009, p. 185)

4. Characteristics of Total Quality Management in Higher Education Institutions

The application of TQM in higher education is associated with several key characteristics, including:

- Organizing and improving the administrative system, with clear definitions of roles and responsibilities.
- Raising the academic level of students.
- Enhancing the competencies of teaching and administrative staff and improving their performance.
- Creating a positive climate supported by a culture of mutual understanding and human relations.
- Encouraging teamwork to strengthen unity and cooperation among all members.
- Increasing awareness and loyalty toward the institution among its stakeholders.
- Enhancing the respect and recognition of the institution at the local, regional, and global levels.
- Continuously improving the educational process and its outcomes.
- Establishing an environment that supports and maintains continuous development.

- Ensuring accuracy in performance from the first attempt, minimizing errors.
- Expanding the knowledge and skills of academic and administrative staff.
- Achieving satisfaction among beneficiaries—students, parents, employees, and the wider community.
- Providing high-quality educational, research, and consultancy services (Sarayrah & Al-Assaf, 2008, p. 16)

5. Principles of Total Quality Management in Higher Education

Higher education institutions must restructure their internal systems promptly to adapt to the evolving social, economic, and technological landscape. Traditional administrative models are no longer adequate. There is a growing need for new administrative approaches that are more flexible, responsive, and capable of leveraging modern technologies (Jaafar Abdullah Mousa Idris et al., 2012, p. 46)

The Concept of Educational Quality in Higher Education Institutions

The educational process, or quality in higher education, is defined as a comprehensive strategy for continuous development. It is the responsibility of the entire university system. This includes textbooks, libraries, students, faculty members, buildings, laboratories, and electronic devices. The aim is to achieve the goals of the university.

The principles of Total Quality Management (TQM) in higher education are not significantly different from the core principles of quality management in the industrial sector. However, the focus here is on human resources, including inputs, processes, and outputs in the educational system.

A. Inputs in the Higher Education Process

Inputs are the foundation for improving the quality of education. Qualified professors, well-equipped classrooms with modern teaching technologies, and motivated students who are financially able to pursue their studies all contribute to achieving high quality in higher education institutions. Often, quality in higher education is perceived as being directly linked to the quality of inputs.

B. The Educational Process

Improving the quality of inputs also means improving the quality of the educational process. This process involves teaching and training, which are inherently complex. These activities are often intangible and difficult to measure in concrete terms.

C. Outputs

The quality of educational outputs refers to widely accepted concepts such as learning standards, acquired skills, and cognitive development. Educational outcomes can be measured. They reflect the relationship between the student's initial state—what they know when they enter the program—and their final state upon graduation.

The quality of the graduate can be defined as the base of knowledge they possess and their ability to apply that knowledge to solve real-world problems. This is particularly evident in the administrative functions of planning, organizing, monitoring, and decision-making (Jaafar Abdullah Mousa Idris et al., 2012, p. 46).

Key Interrelated Elements for Achieving Quality in Higher Education

The main interrelated elements that form the structure of higher education and contribute to achieving quality include the following:

1. Academic Staff

The quality and level of education at a university are more influenced by the quality of its faculty than by any other factor. Academic staff are responsible for designing curricula, determining course content, delivering instruction, and instilling scientific values and ethics in students. The term "academic staff" includes faculty members and their assistants. Their qualifications, achievements, publications, inventions, and awards are key indicators of institutional quality.

What sets world-class universities apart from regular or unknown institutions is the quality of their faculty and the volume of research grants obtained from academic and civic organizations beyond the university.

2. Student Admission Standards

Admission requirements define the type of students that a university aims to attract. In an environment with many universities, attracting high-achieving students enhances academic quality. The difference between entry and graduation levels is often determined by students' competencies at the time of admission.

3. Academic and Professional Programs

Quality in this area involves offering a variety of major and minor fields, ensuring programs are comprehensive and in-depth, maintaining up-to-date content, organizing curricula effectively, and aligning program diversity and objectives with the broader mission of the university.

4. University Administration

This refers to the human element, the organizational environment, the systems, and the capabilities that govern administrative operations at all levels.

5. Infrastructure and Facilities

This includes classrooms, laboratories, libraries, service facilities, and all other resources provided by the university. (Sabri, 2009, pp. 154–155)

. Third: Total Quality Management in Higher Education Institutions and Its Role in Local Community Development

1. Mechanisms for Applying Total Quality Management in Higher Education Institutions

Discussing performance development in higher education institutions stems from a desire to establish a foundation for progress and modernization. It also reflects a need to foster creativity and innovation in a world shaped by the fast pace of human knowledge. This requires reconsidering the role of universities and how they can produce outcomes that align with labor market demands. There must also be a renewed focus on improving institutional performance.

Recent assessments of higher education institutions reveal a steady decline in the quality of services offered. This is most evident in graduates' lack of basic skills and the growing gap between market needs and graduate capabilities. These trends stress the urgent need to find effective solutions. To overcome these challenges, several key factors must be addressed. These include:

- Reshaping the institutional culture. A quality-focused culture differs from traditional administrative culture, which means universities must foster an environment suitable for the application of Total Quality Management (TQM).
- Updating academic systems and teaching methods. Information technology has had a significant impact on university education. Institutions must help students acquire learning skills, especially self-directed learning, and prioritize faculty development.
- Training all university staff on TQM principles and tools. Training should target every level within the institution.
- Offering positive incentives—both financial and moral—to encourage and improve staff performance, boost motivation, and increase job satisfaction.
- Engaging external consultants to support institutional expertise and provide solutions, especially during early stages of TQM implementation.
- Supervising and monitoring work teams. This is essential to ensure tasks are completed accurately and efficiently.

- Aligning university research with community needs. Universities must actively link research with real-world challenges. They are expected to contribute to decision-making, policy analysis, and guide students and researchers to use available knowledge to solve societal problems through self-learning (Sfayeh & Qaroumi, 2017, pp. 212–213)

2. University Education and Its Role in Local Community Development

Universities are responsible for academic education and research. These tasks are carried out by their faculties and research centers with the aim of serving and advancing society. They contribute to intellectual growth, scientific progress, and the promotion of human values. Universities prepare professionals and experts in various fields and equip individuals with foundational knowledge, advanced research skills, and ethical values to help build and strengthen their communities.

Serving society through ongoing interaction with the surrounding environment is a core goal of the university. This involves transferring knowledge and participating in local development programs. Identifying community challenges and allocating institutional resources to solve them helps position universities as cultural and intellectual leaders in their societies.

Today more than ever, universities are expected to serve their local communities and play a direct role in social and economic development. Factors influencing this role include:

- Establishing strong, open communication channels between the university and workplaces, especially production centers, to support mutual goals.
- Involving professionals and technicians from various industries in giving applied lectures and participating in academic boards to share their expertise.
- Encouraging faculty members and researchers to engage with industry and production sites. This helps them understand practical challenges and share their academic insights.
- Designing research plans that focus on solving local community problems.
- Providing university students with field training opportunities at different workplaces, especially production centers, as part of their academic programs (Gharbi, 2013–2014, pp. 151–152)

The most effective organizational structure for linking the university with society depends on each institution's circumstances and the social, economic, and political context of its surrounding environment. Suggested strategies include:

- Assigning each university, faculty, or research center a specific area of concern where it can study problems and offer practical solutions in collaboration with relevant stakeholders.
- Collecting and organizing data on local issues within the university's region, and presenting them to joint committees made up of university members and representatives from production or service sectors. These committees can develop plans and define the university's role.
- Establishing future collaboration between universities and different development sectors through short, medium, and long-term plans. Universities can then align their outputs and programs with national development priorities. (Gharbi, 2013–2014, p. 152)

To achieve development effectively, it is necessary to create a strong link between development plans and higher education institutions. This can be done by aligning higher education strategies with national economic and social development goals. Key objectives should include:

- Expanding educational opportunities to meet workforce needs and development goals.
- Promoting social equity and equal opportunity in admissions across all regions, social classes, and between males and females.
- Improving internal efficiency by reducing waste and loss in the educational process.

- Enhancing external efficiency by updating curricula to align with development needs.
- Providing society with skilled professionals to drive progress.
- Conducting research that offers solutions to real-world challenges.
- Reinforcing values, standards, and policies that support social advancement (Omeyrah, 2012–2013, p. 53)

Conclusion and Recommendations

The advancement of comprehensive development in any country is not solely dependent on the availability of material resources. Rather, the human element is the main driver of progress. Higher education plays a pivotal role in shaping and refining talent, forming the most advanced forms of human capital. To achieve this, universities must adopt modern administrative methods that empower individuals and communities to contribute to development and confront growing challenges.

One of the most effective approaches in this context is the application of **Total Quality Management (TQM)** in higher education institutions. Universities must therefore work to establish a **culture of quality** among their members. Shifting prevailing values, beliefs, and practices toward a new organizational culture is essential to support institutional transformation.

University leadership must also clearly define the **organizational structure**, with special attention to quality-related processes, to ensure continuity and efficiency in outcomes that align with the needs of local communities.

To apply TQM effectively and achieve educational outcomes that contribute to community development, the following measures are recommended:

- Coordinate efforts between higher education leadership—at the level of ministries and universities—to ensure continuous improvement in teaching and learning, keeping pace with modern changes.
- Focus on enhancing the performance of academic supervisors in applying TQM principles and monitor their progress regularly.
- Create a supportive environment—both inside and outside educational institutions—that encourages the spread of a quality-focused culture.
- Anticipate future factors that may influence education to adapt quickly and maintain the required standards without disrupting educational quality or societal values.
- Ensure that educational institutions remain flexible and capable of renewal, whether in programs, goals, structures, or administrative processes, to accommodate new challenges and support societal growth.
- Adjust the university's organizational structure to clearly define the roles and responsibilities of the TQM unit, including the type and method of training required for its team—training that prioritizes innovation and renewal.
- Encourage greater democratic participation in university work and reduce excessive centralization and bureaucracy, which can weaken performance.
- Increase public awareness—inside and outside educational institutions—of the role TQM plays in improving education and in gaining societal acceptance for these reforms.
- Focus more on the **quality** of students than their number. Competition between institutions should prioritize student excellence and potential for social contribution, rather than enrollment figures.
- Expand participation in defining the quality of education—engaging both institutions and the wider community—in a way that directly supports educational improvement.
- Rely on effective leadership in administration, using modern methods of communication and interpersonal relations to foster collaboration and drive motivation toward community development.

- Gain the satisfaction of the local community by meeting its fundamental needs in an efficient and responsive manner.
- Increase funding for institutions and academic programs that are based on TQM and offer direct, tangible benefits to society.
- Establish a **National Center for Total Quality Management** under the Ministry of Higher Education. This center should be responsible for development, implementation, evaluation, and providing the necessary expertise to support educational institutions and their role in society.
- Provide **incentives**—both material and symbolic—to institutions that implement TQM according to agreed-upon standards.
- Organize **conferences and workshops** on quality culture and its role in community development, whether through media, religious centers, or other public institutions.
- Increase **resources**—financial, human, and organizational—and improve administrative processes across the educational system, particularly long-term planning, as TQM implementation requires extended timelines due to training demands, complex variables, and broad societal connections.
- Carry out **continuous assessment and correction** of TQM processes while monitoring educational output to achieve higher quality outcomes.
- Apply TQM to areas such as: curriculum improvement, leadership development, academic supervision, administrative processes, learning resources, student development, evaluation tools, institutional structures, and local community engagement.
- Learn from **international best practices** in countries that have successfully implemented TQM and witnessed positive impacts on their educational, economic, and social systems.

Ethical Considerations

All sources utilized are publicly available historical documents and published scholarly works. The study maintains academic neutrality and respects cultural sensitivity in interpreting both Western and Algerian perspectives. No human or animal subjects were involved in this research.

Acknowledgment

The authors extend sincere appreciation to the Department of Sociology, Faculty: Social and Human Sciences, Mohamed Chérif Messaadia University – Souk Ahras for their support and access to archival materials, and to colleagues specializing in modern Algerian history for their insightful discussions during manuscript preparation.

Funding

This research received no specific grant from any public, commercial, or not-for-profit funding agency.

Conflict of Interest

The author declares no conflict of interest related to the publication of this article.

References

1. Omeyrah, A. (2012–2013). Total Quality Management in Higher Education Institutions: A Case Study of Jijel University. Master's Thesis in Human Resources Management, Constantine 2 University.

2. Al-Sarayrah, K. A., & Al-Assaf, L. (2008). Total Quality Management in Higher Education Institutions: Between Theory and Practice. Arab Journal for Quality Assurance in Higher Education, Vol. 1, No. 1.

3. Idris, J. A. M., et al. (2012). The Possibility of Applying Total Quality Management in Higher Education Services for Continuous Improvement and Accreditation: Case Study of Taif University Branch - Khurmah. Amarapak Journal, Vol. 3, Issue 7.

4. Al-Zawahiri, K. M. (2008). Total Quality in Education and Labor Markets in the Arab World (2nd ed.). Nile Arab Group, Egypt.

5. Bouab, R. (2015). The Functional and Social Performance of University Professors in the LMD System. Journal of Humanities and Social Sciences, Issue 21.

6. Shaaban, E. A. (2009). Total Quality Management. Amman: Zahran Publishing.

7. Safayeh, S., & Qaroumi, H. (2017). Mechanisms for Implementing Total Quality Management in Higher Education Institutions: Evaluation of the Japanese Experience. Baghdad College of Economic Sciences University Journal, Issue 21.

8. Gharbi, S. (2013–2014). The Role of Higher Education in Local Community Development: Analytical Study of Administrative Leaders' Attitudes at Mohamed Khider University - Biskra. Doctoral Thesis in Sociology of Development. Mohamed Khider University, Biskra.

9. Raqad, S. (2013–2014). Applying Quality Assurance in Algerian Higher Education Institutions: Prospects and Challenges – A Field Study in Eastern Algeria. Doctoral Thesis in Economics. Setif 1 University.

10. Ben Arab, A. K. (2003). Higher Education in Algeria. Proceedings of the First Day of the Laboratory of Economics and Business Management. Algeria: Baha Publishing.

11. Al-Zuboun, A. A., & Bani Hamdan, K. (2017). Total Quality Management: Concepts and Applications. Dar Al-Yazouri.

12. Atiah, M. A. (2017). Total Quality and Curriculum. Amman: Dar Al-Manahij.

13. Azzab, M. A. (2011). University Education and Development Issues. Egypt: Anglo-Egyptian Library.

14. Abu Al-Nasr, M. M. (2008). Total Quality Management in Service Fields – Social, Educational, and Health Services. Egypt: Nile Arab Group.

15. Hassan, M. A. (2015). ISO-Based Total Quality Management. Amman: Dar Mu'taz Publishing.

16. Sabri, H. A. (2009). Higher Education Quality and Accreditation Standards: The Private University Experience in Jordan. Arab Journal for Quality Assurance in Higher Education, Vol. 2, No. 4.

17. Al-Abadi, H. F., & Al-Ta'i, Y. H. (2014). University Education from an Administrative Perspective: Readings and Studies. Amman: Dar Al-Yazouri.

18. Al-Ta'i, Y. H., et al. (2009). Total Quality Management in University Education. Jordan: Al-Warraq Publishing.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Influence of the External Environment on the Development of Entrepreneurial Thinking: An Empirical Study in Algeria

Dr.
Tabet Aoul Khadidja Imene
Lecturer B, Abou Bekr Belkaid University, Tlemcen, Member of MECAS laboratory
Tlemcen, Algeria
E-mail: Tabet.aoul.imene@gmail.com, Orcid ID: 0009-0006-2884-3650

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Entrepreneurial thinking, external environment, government support, social and cultural factors, economy, Algeria.

Abstract

This article provides an in-depth analysis of the impact of the external environment on the development of entrepreneurial thinking in Algeria. Based on an empirical study conducted with a sample of 128 individuals from different regions, the research explores the influence of social, cultural, economic, and institutional dimensions, with a particular focus on the role of government support. The findings reveal that social and cultural factors are the most decisive in shaping entrepreneurial thinking, followed by institutional support, while economic factors appear to be secondary. The paper develops a comprehensive literature review, a solid theoretical framework, and offers a detailed discussion of the results to provide context-specific recommendations. The main objective of this study is to enhance the understanding of external conditions affecting entrepreneurship and to identify key levers to foster entrepreneurial spirit in Algeria.

Citation. Tabet Aoul K. I. (2025). The Influence of the External Environment on the Development of Entrepreneurial Thinking: An Empirical Study in Algeria. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1100–1107. https://doi.org/10.56334/sei/8.11.90

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 28.04.2025 | Accepted: 23.06.2025 | Publishing time: 05.10.2025

Introduction

Entrepreneurship has increasingly been acknowledged as a cornerstone for economic development, innovation, and competitiveness in the twenty-first century. In both developed and developing nations, entrepreneurial activity is regarded as a major engine of job creation and economic dynamism (Audretsch, 2009). Countries that succeed in nurturing entrepreneurial culture often experience sustained economic resilience and adaptability in the face of global changes. In this regard, entrepreneurial thinking, as an underlying mindset that precedes entrepreneurial action, becomes a crucial factor.

In Algeria, the stakes are particularly high. Despite its vast natural resources, the Algerian economy remains heavily dependent on hydrocarbons, which exposes the country to vulnerabilities linked to fluctuations in global

energy prices (Belkacem, 2020). Youth unemployment rates remain high, and traditional employment in the public sector is no longer capable of absorbing the growing labor force. These realities call for innovative solutions to diversify the economy, empower youth, and promote sustainable growth. Entrepreneurship is increasingly seen not just as an economic necessity but as a strategic choice for long-term stability and prosperity.

However, entrepreneurial thinking does not emerge in isolation. It is shaped by a combination of personal, social, cultural, economic, and institutional factors. The environment in which individuals operate can either encourage or hinder entrepreneurial initiative. According to Shane and Venkataraman (2000), entrepreneurship is not only about individuals but also about the opportunities embedded in their environment. This perspective emphasizes that external conditions are as important as individual traits in fostering entrepreneurial behavior.

This study focuses on Algeria as a case study, aiming to understand how external environmental factors—government support, cultural and social influences, and economic conditions—affect the development of entrepreneurial thinking. By adopting this approach, the study contributes to filling a gap in the literature on entrepreneurship in North Africa and provides insights that may inform policymakers and practitioners.

The central research question is: **To what extent does the external environment influence entrepreneurial thinking in Algeria?**

Research Objectives

The overarching aim of this study is to examine the extent to which the external environment influences the development of entrepreneurial thinking in Algeria. More specifically, the research pursues the following objectives:

1. **To explore the role of social and cultural factors** in shaping entrepreneurial mindsets. This involves examining how family support, networks, role models, and prevailing cultural values affect attitudes toward risk-taking, innovation, and proactivity.
2. **To assess the effectiveness of government support mechanisms** in fostering entrepreneurship. The objective here is to analyze the contribution of public policies, programs such as ANSEJ and ANGEM, and institutional interventions in stimulating entrepreneurial thinking, while identifying potential shortcomings and areas for improvement.
3. **To evaluate the impact of economic conditions** on entrepreneurial orientation. This includes investigating the role of access to finance, market stability, infrastructure, and broader macroeconomic conditions in enabling or constraining entrepreneurial activity.
4. **To identify the relative weight of these factors** in influencing entrepreneurial thinking. By comparing the strength of social, cultural, institutional, and economic determinants, the study seeks to establish a hierarchy of influences specific to the Algerian context.
5. **To formulate practical recommendations** aimed at strengthening the Algerian entrepreneurial ecosystem. The ultimate objective is to provide insights for policymakers, educational institutions, and practitioners on how to create an enabling environment for entrepreneurship.

Through these objectives, the study contributes to both academic literature—by contextualizing entrepreneurship in North Africa—and to practice, by offering actionable guidance for enhancing entrepreneurial culture and development in Algeria.

1. Theoretical Framework and Literature Review

Entrepreneurial thinking is a complex construct that has been studied from multiple disciplinary perspectives, including economics, sociology, psychology, and management. It refers to the mindset and cognitive processes that enable individuals to identify opportunities, innovate, and take calculated risks (Gibb, 2002). Unlike entrepreneurial behavior, which is observable in concrete actions, entrepreneurial thinking captures the underlying mental orientation that precedes action.

Classical perspectives. Historically, entrepreneurship has been associated with risk-taking and innovation. Cantillon (1755) defined the entrepreneur as someone who assumes risks in conditions of uncertainty, while

Schumpeter (1934) conceptualized the entrepreneur as an innovator who disrupts existing structures through "creative destruction." These foundational theories underline the interplay between individual agency and environmental conditions.

Contemporary perspectives. More recent research emphasizes entrepreneurial orientation as a multidimensional construct encompassing innovativeness, proactiveness, autonomy, and risk-taking (Lumpkin & Dess, 1996). This perspective links entrepreneurial thinking not only to business creation but also to broader processes of value creation across sectors. Shane (2003) further highlights that entrepreneurship occurs at the nexus between individuals and opportunities, reinforcing the importance of context.

Social and cultural factors. Social capital and cultural norms play a critical role in fostering or constraining entrepreneurial aspirations. Hofstede (2001) demonstrated how cultural values—such as individualism versus collectivism, or uncertainty avoidance—shape entrepreneurial behavior. In societies where risk-taking and innovation are valued, entrepreneurship flourishes. In Algeria, however, cultural norms historically favored stable public-sector employment over entrepreneurial ventures (Khelil, 2016). Nevertheless, new generational dynamics, role models, and increasing exposure to global entrepreneurial narratives are gradually shifting attitudes.

Social networks, family support, and role models provide essential resources for entrepreneurs. Studies have shown that aspiring entrepreneurs rely heavily on their immediate social environment for financial, emotional, and informational support (Granovetter, 1985; Aldrich & Zimmer, 1986). In the Algerian context, family backing is often indispensable for launching a business, compensating for the absence of institutional mechanisms.

Government support and institutional environment. Institutions play a dual role: they provide formal frameworks (laws, policies, programs) and shape informal norms (North, 1990). Effective policies can stimulate entrepreneurship by reducing entry barriers, offering financial incentives, and supporting training and mentoring programs. Aidis et al. (2008) demonstrated that institutional quality is directly correlated with entrepreneurial development. In Algeria, several government initiatives—such as ANSEJ (National Agency for Youth Employment Support) and ANGEM (National Microcredit Management Agency)—were introduced to stimulate entrepreneurship. However, bureaucratic complexity and weak monitoring often undermine their potential (Belkacem, 2020).

Economic factors. The economic environment also shapes entrepreneurial feasibility. According to Minniti (2008), stable macroeconomic conditions, access to credit, and market opportunities are essential for entrepreneurial activity. In many developing countries, however, limited financial infrastructure and market instability reduce the attractiveness of entrepreneurship. In Algeria, restricted access to banking credit and underdeveloped venture capital mechanisms hinder business creation and growth (World Bank, 2021).

Integrative perspectives. Zahra and Wright (2011) argue that entrepreneurship should be studied as part of a broader ecosystem, where individuals, institutions, and economic structures interact. This ecosystem approach highlights that entrepreneurial thinking is not determined by one factor alone but results from the interaction of multiple conditions.

In sum, the literature shows that entrepreneurial thinking is embedded in a broader socio-economic and institutional context. While individual traits are important, external factors—social, cultural, economic, and institutional—play a decisive role in enabling or constraining entrepreneurial initiative.

2. Conceptual Theoretical Model and hypotheses:

Building on the literature review and the hypotheses formulated in this study, a theoretical model was developed to capture the expected relationships between external environmental factors and entrepreneurial thinking. This model is grounded in previous research which suggests that entrepreneurship emerges at the intersection of individual traits and contextual conditions (Shane & Venkataraman, 2000; Zahra & Wright, 2011).

The model incorporates three key external dimensions:

- **Social and Cultural Factors** (family support, cultural values, role models, networks).
- **Government Support** (policies, programs, subsidies, training, mentoring).
- **Economic Conditions** (access to finance, market opportunities, infrastructure).

These dimensions are hypothesized to exert a **positive influence** on the development of **Entrepreneurial Thinking**, conceptualized as a multidimensional construct that includes innovativeness, proactiveness, and risk-taking (Lumpkin & Dess, 1996).

Accordingly, the following hypotheses were embedded into the model:

- **H1:** Social and cultural factors positively influence entrepreneurial thinking.
- **H2:** Government support positively influences entrepreneurial thinking.
- **H3:** Economic conditions positively influence entrepreneurial thinking.

This theoretical model serves as the foundation for the empirical investigation conducted in Algeria.

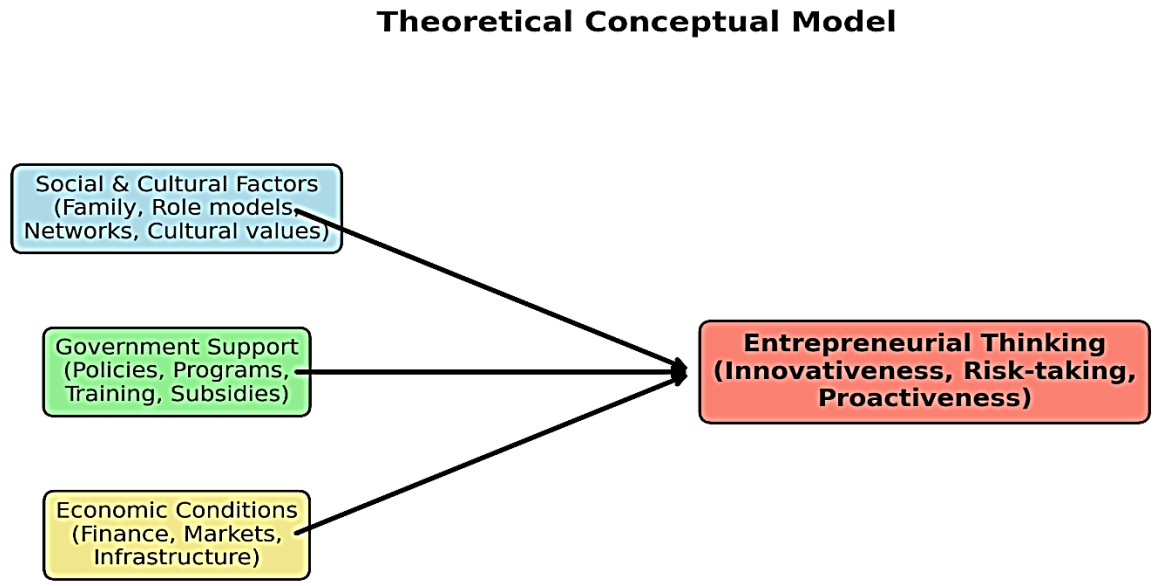

Theoretical Conceptual Model
Social & Cultural Factors (Family, Role models, Networks, Cultural values)
Government Support (Policies, Programs, Training, Subsidies)
Economic Conditions (Finance, Markets, Infrastructure)
Entrepreneurial Thinking (Innovativeness, Risk-taking, Proactiveness)

Figure1 : *Theoretical Conceptual Model of the Study.*

Source: Author's own elaboration (2025).

3. Methodology

This study adopts a quantitative approach, complemented by exploratory qualitative insights. The sample includes 128 individuals from various Algerian provinces (Tlemcen, Oran, Algiers, Tizi-Ouzou). Data were collected using a structured questionnaire with Likert-scale items, covering three dimensions: government support, social and cultural factors, and economic environment.

The data collection took place between May and June 2025. Statistical analyses were conducted using SPSS, including:

- Descriptive statistics to characterize the sample.
- Reliability analysis (Cronbach's Alpha) to validate scales.

- Spearman correlations to test associations between variables.
- t-tests and linear regression analysis to evaluate the strength of the hypotheses.

4. Results

Three main findings emerged:

1. **Social and cultural factors.** These exert the strongest influence on entrepreneurial thinking ($r = 0.72$; $p < 0.01$). Family support, social recognition of success, and role models serve as key drivers of entrepreneurial initiative.
2. **Government support.** Institutional support, such as ANSEJ and ANGEM programs, shows a positive but less pronounced effect ($r = 0.58$; $p < 0.05$). While financial support exists, administrative complexity and insufficient follow-up undermine effectiveness.
3. **Economic factors.** These have the weakest influence ($r = 0.31$; $p < 0.1$). Restricted access to financing, market fragility, and macroeconomic instability limit entrepreneurial feasibility.

The findings partially confirm the hypotheses: social and cultural factors are predominant, government support has a secondary role, and economic factors remain marginal.

5. Discussion

The findings are consistent with Hofstede's (2001) cultural framework and Shane's (2003) analysis of entrepreneurial ecosystems, emphasizing the pivotal role of social norms and cultural values. However, the Algerian context demonstrates a unique pattern: entrepreneurial thinking is more strongly shaped by social and cultural dynamics than by economic stability.

Unlike developed economies, where economic stability is a key determinant of entrepreneurship (Aidis et al., 2008), Algeria's economic instability reduces the impact of financial support mechanisms. These results also highlight the limitations of government initiatives, which need structural reforms to become more effective (Belkacem, 2020).

6. Proposed Empirical Model of Entrepreneurial Thinking in Algeria

Based on the results of the study, an empirical model was developed to illustrate how the external environment actually shapes entrepreneurial thinking in the Algerian context. While the theoretical model assumed an equal positive influence of all three dimensions, the findings indicate differences in the strength of these relationships.

The empirical model shows that:

- **Social and Cultural Factors** have the **strongest influence**, acting as the primary driver of entrepreneurial mindsets.
- **Government Support** has a **moderate influence**, highlighting the importance of institutions but also their limitations.
- **Economic Conditions** exert the **weakest influence**, reflecting structural barriers in Algeria's economy.

At the core of the model lies **Entrepreneurial Thinking**, shaped by these three dimensions but in unequal proportions. This model contributes to the literature by emphasizing the dominance of social and cultural mechanisms in contexts where institutional and economic infrastructures are fragile.

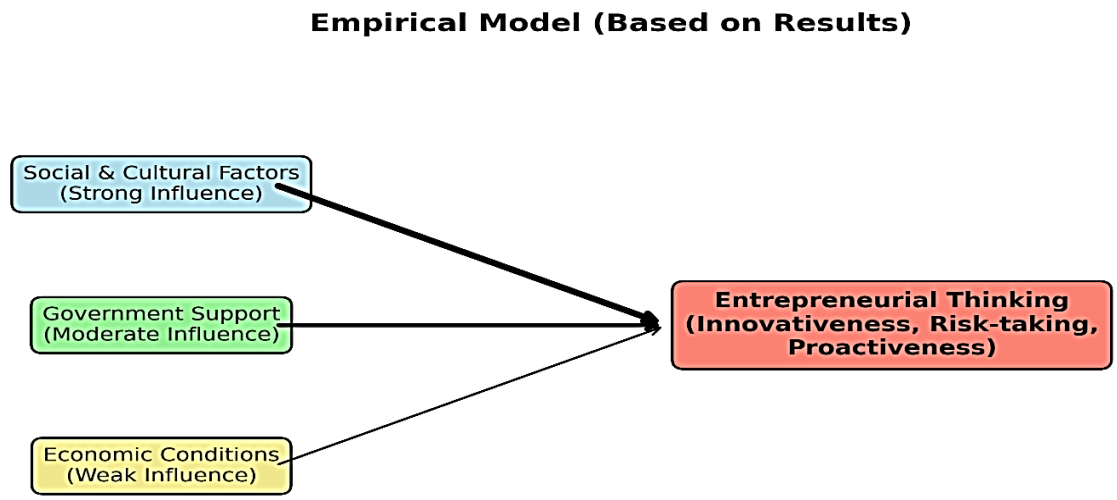

Empirical Model (Based on Results)
Social & Cultural Factors (Strong Influence)
Government Support (Moderate Influence)
Economic Conditions (Weak Influence)
Entrepreneurial Thinking (Innovativeness, Risk-taking, Proactiveness)

Figure2 : *Empirical Model of Entrepreneurial Thinking in Algeria. Source: Author's own elaboration (2025).*

Conclusion and Recommendations

Conclusion

This study has demonstrated that the external environment plays a decisive role in shaping entrepreneurial thinking in Algeria. The findings confirm that social and cultural factors are the strongest drivers of entrepreneurial mindsets, while government support exerts a moderate influence, and economic conditions remain comparatively weaker. These results highlight the importance of looking beyond traditional economic explanations and recognizing the cultural and institutional specificities that characterize emerging economies.

From a broader perspective, the Algerian case underscores the central role of society in fostering or constraining entrepreneurial aspirations. Family support, the social valorization of entrepreneurial success, and the presence of role models have proven to be more decisive than the availability of financial resources. This suggests that entrepreneurship in Algeria is not merely an economic act but a deeply social phenomenon, embedded in cultural norms and collective values. At the same time, the role of institutions, particularly government programs such as ANSEJ and ANGEM, cannot be overlooked. Despite limitations in implementation, they remain essential frameworks that can be further improved to stimulate entrepreneurship.

The relatively weak impact of economic factors points to structural challenges within the Algerian economy, including limited access to financing, bureaucratic complexity, and market fragility. However, this should not be seen as a permanent barrier. With adequate reforms aimed at strengthening financial infrastructure, creating venture capital systems, and simplifying administrative procedures, the economic environment could evolve into a more supportive driver of entrepreneurial development.

Strategically, Algeria must pursue a dual approach: on the one hand, reinforcing institutional efficiency and financial accessibility; on the other hand, transforming cultural perceptions of entrepreneurship through education, media, and community initiatives. By integrating entrepreneurial education at all levels of the school and university system, the country can cultivate entrepreneurial mindsets from an early age. Similarly, highlighting entrepreneurial success stories in the media and supporting networks of mentors and incubators would contribute to the normalization of entrepreneurship as a viable and respected career path.

In the long term, Algeria must also integrate into global entrepreneurial ecosystems. Building partnerships with international organizations, promoting cross-border entrepreneurial exchanges, and leveraging digital platforms could expand opportunities for Algerian entrepreneurs to innovate and compete globally. By fostering an ecosystem that combines strong institutional frameworks, cultural valorization, and international integration, Algeria can gradually transform entrepreneurship into a central pillar of its socio-economic development.

Ultimately, the study reinforces the idea that entrepreneurship is not solely an economic process but a multidimensional phenomenon shaped by the interplay of culture, society, institutions, and economy. For Algeria, the challenge lies in aligning these dimensions toward a coherent vision that empowers its youth, diversifies its economy, and positions the country as a competitive actor in the global knowledge economy.

Managerial and Policy Implications

The findings of this research carry significant implications for both policymakers and practitioners seeking to foster entrepreneurial thinking in Algeria.

1. **For policymakers**
    - **Reinforce institutional efficiency.** Simplify administrative procedures and reduce bureaucratic barriers that discourage young entrepreneurs.
    - **Strengthen financial infrastructure.** Develop alternative funding mechanisms such as venture capital, angel investment, and crowdfunding platforms to complement traditional credit systems.
    - **Promote entrepreneurial education.** Introduce mandatory entrepreneurship modules at different levels of the education system, from secondary schools to universities, to instill entrepreneurial values early.
    - **Support cultural change.** Launch nationwide campaigns to valorize entrepreneurship as a respected and rewarding career, using media and public figures as role models.
    - **Encourage regional ecosystems.** Develop decentralized innovation hubs and incubators in different regions to support local initiatives and reduce dependency on the capital.
2. **For managers and practitioners**
    - **Leverage social networks.** Entrepreneurs should actively build and maintain networks that provide access to resources, information, and mentorship.
    - **Adopt innovative business models.** Given the fragility of the economic environment, entrepreneurs should embrace flexibility, digital platforms, and resource-sharing strategies to remain competitive.
    - **Collaborate with institutions.** Despite their limitations, government programs can offer valuable support; entrepreneurs should strategically engage with these mechanisms while also exploring private-sector partnerships.
    - **Promote role models within organizations.** Established businesses and successful entrepreneurs should highlight internal success stories and encourage knowledge-sharing to inspire the next generation.
    - **Invest in continuous learning.** Managers should prioritize training in digital skills, innovation management, and market research to adapt to global entrepreneurial trends.

By addressing both institutional and managerial dimensions, Algeria can create a more balanced entrepreneurial ecosystem where cultural support, institutional reforms, and economic opportunities converge. This dual focus is essential to transform entrepreneurial thinking into tangible entrepreneurial action, capable of driving long-term socio-economic development.

Recommendations:

- Integrate entrepreneurial education into school and university curricula.
- Simplify administrative procedures and strengthen government program follow-up.
- Develop alternative financing mechanisms (venture capital, crowdfunding).
- Promote entrepreneurial success stories through media to inspire young generations.
- Create regional ecosystems fostering innovation and collaboration between institutions.

Limitations and future research. The relatively small sample size limits generalizability. Future research could expand the dataset, adopt a longitudinal approach, and conduct comparative studies with other Maghreb or African countries.

References

1. Aidis, R., Estrin, S., & Mickiewicz, T. (2008). Institutions and entrepreneurship development in Russia: A comparative perspective. *Journal of Business Venturing, 23*(6), 656–672. https://doi.org/10.1016/j.jbusvent.2008.01.005
2. Audretsch, D. B. (2009). The entrepreneurial society. *Journal of Technology Transfer, 34*(3), 245–254.
3. Belkacem, L. (2020). Institutional barriers to entrepreneurship development in Algeria. *Revue des Sciences de Gestion, 55*(3), 89–104.
4. Cantillon, R. (1755). *Essai sur la nature du commerce en général*. London: Fletcher Gyles.
5. Gibb, A. (2002). In pursuit of a new "enterprise" and "entrepreneurship" paradigm for learning. *International Journal of Management Reviews, 4*(3), 233–269.
6. Hisrich, R. D., Peters, M. P., & Shepherd, D. A. (2005). *Entrepreneurship*. McGraw-Hill.
7. Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Sage publications.
8. Khelil, N. (2016). The many faces of entrepreneurial failure: Insights from an empirical taxonomy. *Journal of Business Venturing, 31*(1), 72–94.
9. Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review, 21*(1), 135–172.
10. Minniti, M. (2008). The role of government policy on entrepreneurial activity: Productive, unproductive, or destructive? *Entrepreneurship Theory and Practice, 32*(5), 779–790.
11. North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press.
12. Schumpeter, J. A. (1934). *The theory of economic development*. Harvard University Press.
13. Shane, S. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus*. Edward Elgar Publishing.
14. Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review, 25*(1), 217–226.
15. World Bank. (2021). *Doing Business 2021: Comparing Business Regulation in 190 Economies*. Washington, DC: World Bank.
16. Zahra, S. A., & Wright, M. (2011). Entrepreneurshi

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Socioeconomic and Cultural Determinants of Female Students' Attitudes Toward Sports and Recreational Tourism: An Empirical Study in Secondary Schools of Laghouat, Algeria

Guignol Badreddine
Ph.D.
Institute of Physical and Sports Activities Sciences and Techniques, Akli Mohand Oulhadj University
Bouira, Algeria
E-mail: badreddinesport@gmail.com
ORCID: https://orcid.org/0009-0008-5565-3486

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Family cultural capital; Economic capital; Female students; Sports participation; Recreational tourism; Bourdieu; Gender and sport; Algeria; Laghouat; Sociocultural determinants; Physical activity; Education and leisure; Youth development.

Abstract
This research investigates the role of family cultural and economic capital in shaping the attitudes of secondary school girls toward participation in sports and recreational tourism activities in Laghouat, Algeria. Grounded in Pierre Bourdieu's theory of social and cultural capital, the study explores how familial educational background, parental occupation, and socioeconomic conditions influence young women's perceptions of sports as a form of leisure, self-development, and social inclusion. Using a quantitative survey method supported by descriptive and inferential statistical analysis, data were collected from 300 secondary school girls across different educational institutions in the region. The study identifies significant correlations between parental education, family income, and students' engagement levels in sports and tourism-related activities. Results suggest that families with higher cultural and economic resources foster more positive attitudes toward physical and sports engagement, reflecting greater awareness of its psychological, health, and social benefits. Conversely, limited resources and conservative family norms often restrict girls' participation, revealing a sociocultural barrier to gender equality in sports and leisure sectors. The findings underscore the importance of strengthening family-oriented cultural awareness programs and school-based sports promotion initiatives to enhance female participation. This study contributes to the growing body of sociological literature on gender, sport, and leisure in the Arab–Maghreb context and provides actionable insights for policymakers, educators, and sports institutions aiming to promote inclusivity and social development through physical activity.

Citation. Guignol B. (2025). Socioeconomic and Cultural Determinants of Female Students' Attitudes Toward Sports and Recreational Tourism: An Empirical Study in Secondary Schools of Laghouat, Algeria. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1108–1116. https://doi.org/10.56334/sei/8.11.91

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 28.03.2025 | Accepted: 17.07.2025 | Publishing time: 05.10.2025

1. Introduction and Research Problem

Women's sports in Algeria are currently witnessing some improvement compared to previous decades. Thanks to the efforts of the state and sports institutions, there is now movement in this field. Given the importance of sports today as an essential component of individual life—contributing to physical, mental, psychological, and social development—it

has become evident that all members of society, regardless of gender, engage in various forms of sports. Since women are an integral part of society, they too have come to participate in sports alongside men.

The phenomenon under study, namely the relationship between families' cultural and economic levels and female students' engagement in women's sports, is of particular interest to researchers and specialists in the field. The family's cultural and economic levels are among the key factors that enable girls and women to engage in physical and sports activities. The higher these levels, the greater the opportunities for women to practice sports.

2. General Research Question

- Does the family's cultural and economic capital influence the attitudes of female secondary school students toward practicing recreational sports?

2.1 Sub-questions:

• Is there a statistically significant relationship between family cultural level and female secondary school students' attitudes toward practicing recreational sports?
• Is there a statistically significant relationship between family economic level and female secondary school students' attitudes toward practicing recreational sports?

3. General Hypothesis

- The family's cultural and economic capital influences the attitudes of female secondary school students toward practicing recreational sports.

3.1 Sub-hypotheses:

• There is a statistically significant correlation between family cultural level and students' attitudes toward practicing recreational sports.

• There is a statistically significant correlation between family economic level and students' attitudes toward practicing recreational sports.

4. Objectives of the Study

This study aims to:

• Identify how family economic level influences female students' practice of recreational sports.

• Explore the contribution of the cultural level of families with practicing female members to students' orientations toward sports activities.

• Examine the attitudes of female secondary school students toward practicing women's sports.

• Raise public and family awareness of the importance of women's participation in sports.

5. Significance of the Study

The significance of this study lies in the role of the family as the primary unit in which the individual grows, learns, and develops behaviors necessary for societal integration. The family shapes physical, psychological, and social growth, while providing security and social acceptance. Accordingly, the family plays a crucial role in encouraging children to engage in physical and sports activities, shaping female students' attitudes toward becoming active participants in women's sports.

Cultural and economic levels, in particular, are among the most influential factors encouraging female students to engage in sports. This study highlights their role in shaping students' orientations, the reasons motivating them to participate in sports, and the importance of cultural awareness within the family in supporting such orientations.

6. Key Concepts

6.1 Cultural Capital

Pierre Bourdieu first introduced the term "cultural capital," alongside "social capital," in theorizing the role of cultural knowledge and tastes in class formation during the 1960s. He examined how the bourgeoisie (middle and upper classes in French society) mobilized material and non-material resources to maintain and transmit power and privileges to their children. (John Scott, 2009) For Bourdieu, parental cultural capital meant that children valued education, understood its implicit "rules of the game," and thus had better opportunities for qualifications and careers. He argued that cultural capital was crucial in transmitting power and privilege across generations.

6.2 Economic Capital of the Family

This concept refers to all resources related to the family's living conditions, i.e., the extent to which it satisfies material and non-material needs. Sources may include parental income or other financial assets that determine the family's standard of living. This affects housing quality and ownership, nutrition, education, health, and leisure. Economic level is often measured through indicators such as daily or monthly income, property ownership (housing, land, commercial spaces), and means of transport.

6.3 Family

The family is the primary social unit, mediating between the individual and society. It is the child's first social environment, shaping behavioral patterns that fulfill needs and ensure social adjustment. It constitutes a web of human relationships. (Arslan, 2009)

6.4 Attitude

The term "attitude" derives from the French word *attitude* and is sometimes translated as "stance." Psychologist Fakher Aqal defined it as "an individual's predisposition to respond to a particular event or idea in a pre-determined way." Attitudes can be positive or negative. (Aaqel, 1979)

6.5 Women's Sports

The participation of women in sports activities, whether individual or collective, within sports clubs.

7. Previous and Related Studies

7.1 Study One

Title: *The Socio-Economic and Cultural Capital of the Family and Its Relationship to Pedagogical Communication among University Students.*
A field study conducted at Amar Telidji University, Laghouat, by students Ben Saada Amal, Ben Saada Oueish, and Hamama Sarah.
Sample: 85 students across three faculties (Law and Social Sciences, Science and Engineering, Economics and Humanities).
Methods: Descriptive and statistical approaches using observation and questionnaires.

General Question:

To what extent does family socio-economic and cultural capital influence university students' pursuit of higher education?

Objectives:

1. To identify students' social, economic, and cultural backgrounds and their future outlooks.

2. To explore the role of social, economic, and cultural variables in shaping students' desire to pursue higher education.

Findings:
Results showed that socio-economic capital is influenced by variables such as social origin, family size, housing, parental occupation, and income. Cultural capital was defined mainly by parental education, family linguistic skills, siblings' educational levels, and cultural stimuli available at home. The study concluded that there is indeed a relationship between socio-economic capital and students' pursuit of higher education, mediated by social background, family income, and home environment.

7.2 Study Two

Title: *The Relationship of Family Social, Cultural, and Economic Levels to Academic Achievement and Adjustment.*

Conducted by Helen Likim at Temple University (1980). Sample: 40 primary school students from financially disadvantaged families in the U.S.

Findings: Academic achievement differences between high- and low-achieving children were linked to factors such as parental occupation, family residence duration, availability of books and educational games, and parental supervision. The study showed that low economic, social, and cultural levels directly impacted students' achievement by limiting material resources, educational awareness, and parental support. (Latif, 1990)

8. Theoretical Chapters

The theoretical framework of this study consists of three chapters:

- Psychological Attitudes
- Adolescence in Secondary School
- Socialization and the Family's Economic and Cultural Levels

9. Applied Fieldwork

Research Methodology:

Given the descriptive nature of the topic, the study employed the descriptive method to analyze the relationship between family cultural/economic levels and female students' attitudes toward practicing women's sports.

9.1 Exploratory Study:

Preliminary steps included reviewing literature, consulting teachers, and interviewing a pilot sample of 15 female students during physical education classes.

9.2 Research Variables:

- **Independent Variable:** Family cultural and economic capital.
- **Dependent Variable:** Attitudes toward practicing recreational women's sports.

9.3 Research Sample:

A random sample of 95 secondary school female students from Laghouat.

9.4 Data Collection Tools:

A Likert-scale questionnaire was designed to measure the influence of family cultural and economic levels on students' attitudes toward women's sports. It included 15 items divided into two dimensions: cultural and economic.

Number of Statements	Field
• From paragraph (01) to paragraph (07)	1- The Cultural Dimension.
• From paragraph (08) to paragraph (15)	2- The Economic Dimension
• **Total: 15 statements**	**Total**

Table (1): Distribution of Questionnaire Statements According to Dimensions

4-7. Psychometric Properties of the Measurement Tool:

First: Validity and Reliability of the Questionnaire

4-7-1. Validity of the Tool:

In constructing the study tool, we relied on the validity of the hypothetical construct concept, as the tool was developed in light of the fundamental hypotheses of the study. To assess the adequacy of the dimensions and items of the tool, we adopted content validity through expert judgment, by presenting the study tool to a group of academic researchers in the field of sports. Content validity refers to the extent to which the questionnaire represents the aspects being measured, through a logical analysis of its items in order to identify the functions and dimensions they reflect. Furthermore, the validity coefficient can be calculated.

4-7-2. Reliability of the Questionnaire:

The reliability coefficient of the study tool was calculated using the test-retest method, applying the same test twice and determining the correlation coefficient using Pearson's linear correlation. After application, the correlation coefficient was found to be: R1 = 0.823.

5. Statistical Methods Used:

Following the application to the study sample, a set of data was obtained. To test the hypotheses, several statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS). The following relationships and tests were selected:

- Arithmetic mean, standard deviation, and total raw scores.
- Simple Pearson linear correlation coefficient and multiple correlation coefficient.
- Simple and multiple linear regression.
- Analysis of variance (ANOVA), T-test, and F-test.

6. Analysis and Discussion of Questionnaire Results:

6-1. Regression Coefficients Between the Independent and Dependent Variables of the First Hypothesis

Table (2): ANOVA and Correlation Coefficients Between the Independent Variable (Cultural Level) and the Dependent Variable (Female Students' Attitudes Toward Practicing Sports).

Adjusted R Square	R Square	Correlation Coefficient (R)	sig → Significance Level (Sig.)	Degrees of Freedom (df)	F Value	Mean Square	Sum of Squares	Source

410,	40,4	0,65	0.00	5	17,321	13869.58	40390.80	Regression
			-	90	-	8192.81	5728,11	Error
			-	95	-	503.52	61430.88	Total

The purpose of calculating the Analysis of Variance (ANOVA) table is to analyze the total sum of squares of deviations for the dependent variable (SST), the regression sum of squares (SSR), and the error sum of squares (SSE).

The square root of the coefficient of determination equals the correlation coefficient (R).

By substituting the values, we find that these results are consistent with those obtained in the table. These findings indicate that **65.7% of the total variance in the dependent variable is explained by the linear regression model with the indicators of the independent variable**. This result justifies the value of the adjusted coefficient of determination obtained in Table (2).

Based on these results, we conclude that there is a **strong correlation between the family's cultural level and female students' attitudes toward practicing sports**, which confirms the first hypothesis.

6-2. Regression Coefficients Between the Independent and Dependent Variables of the First Hypothesis

Table (3): ANOVA and Correlation Coefficients Between the Independent Variable (Economic Level) and the Dependent Variable (Female Students' Attitudes Toward Practicing Sports)

Adjusted R Square	R Square	Correlation Coefficient (R)	sig → Significance Level (Sig.)	Degrees of Freedom (df)	F Value	Mean Square	Sum of Squares	Source
500,	610,	520,	0.00	5	17,321	8469.100	040.5205	Regression
			-	90	-	12.6960	155728,	Error
			-	95	-	4.5410	3230.342	Total

The purpose of calculating the Analysis of Variance (ANOVA) table is to analyze the total sum of squared deviations for the dependent variable (SST), the regression sum of squares (SSR), and the error sum of squares (SSE).

The square root of the coefficient of determination equals the correlation coefficient (R).

By substituting the values, we find that these results are consistent with those obtained in the table. The findings reveal that **25% of the total variance in the dependent variable is explained by the linear regression model with the indicators of the independent variable**. This result justifies the value of the adjusted coefficient of determination obtained in Table (3).

From these results, we conclude that there is a **positive correlation between the family's economic level and female students' attitudes toward practicing sports**, which supports the second hypothesis.

Regression Coefficients between the Independent and Dependent Variables of the General Hypothesis:

Table (4): Regression Coefficients between the Independent Variables (Cultural and Economic Levels) and the Dependent Variable (Attitudes toward Practicing Women's Sports)

Adjusted R Square.	Coefficient of Determination (R^2)	Correlation Coefficient (R)	P-value	t (calculated)	Standardized Coefficients	Unstandardized Coefficients		Source
					Beta	Standard Error	B	
410,	40,4	0,65	0,00	2,32	–	31,30	98,29	**Regression Intercept**
			0,222	1,04	0,207	0,652	0,761	Cultural Dimension
			0,00	3,27	0,013	2,53	0,158	Economic Dimension

Commentary on the Results and Judgment on the Validity of the Regression Model

1. **Theoretical Conditions:**
   a. Agreement or Logical Consistency of the Values and Signs of the Regression Coefficients: It is observed here that the variables of the studied phenomenon fall within the pedagogical framework in the field of sports. Referring to the multiple linear regression model obtained in the study, which illustrates the correlation between the research variables after quantification, we find:

Y=0.76+0.158Xeconomic+0.761XculturalY = 0.76 + 0.158X_{economic} + 0.761X_{cultural}Y=0.76+0.158Xeconomic+0.761Xcultural

From this model, we conclude the following:

- The constant term has a positive value and does not equal zero (98.29).
- The slope of the regression line for the cultural dimension has a positive value (0.761).
- The slope of the regression line for the economic dimension also has a positive value (0.158).

We note that there is no contradiction between the theoretical conditions of the studied phenomenon and the results of the regression model, which explains the effect relationship between the independent variables (cultural and economic levels) and the dependent variable (attitudes toward practicing individual or group sports).

b. The Explanatory Power of the Model: The explanatory power of the regression model is judged through the adjusted coefficient of determination (Adjusted R^2), presented in Table (2). This table shows the significance of the relationship between the independent variables (economic and cultural capital) and the dependent variable (female students' attitudes toward practicing sports). The adjusted coefficient of determination was estimated at (0.667), meaning that the chosen study variables explained **66.7%** of the variance in the dependent variable. In other words, the changes occurring in the dependent variable are attributed to the indicators of the independent variables and to other factors.

These results reflect the validity of the selected variables for the study and their ability to explain the outcomes of the regression model. The statistical significance of this model is supported by the significance level of (0.05), which is statistically significant and consistent with the general hypothesis of the study.

7. General Conclusion. Based on the study results, we conclude that there is a genuine relationship between the family's cultural and economic levels and female students' attitudes toward practicing women's sports at the secondary school stage. This is clearly reflected in the fact that female students from families with higher cultural and economic levels demonstrate a stronger tendency toward practicing sports.

The results further reveal the following:

- The influence of all material aspects of the family, such as parents' income, living standard, and possession of a car, on female students' attitudes toward practicing women's sports.

- The existence of a strong correlation between the family's cultural level—such as the parents' educational attainment and their reading habits—and female secondary school students' attitudes toward practicing women's sports.

The significant role of the family in shaping female students' attitudes toward sports, whether team-based or individual.

Ethical Considerations

This study was conducted in full compliance with institutional and national ethical guidelines for social research. Participation was entirely voluntary, and informed consent was obtained from all participants and their guardians before data collection. Anonymity and confidentiality of personal information were strictly maintained. The study posed no physical or psychological risk to participants, and the collected data were used solely for academic and scientific purposes. Ethical approval for this research was obtained from the Ethics Committee of Akli Mohand Oulhadj University, Bouira.

Acknowledgments

The author extends sincere gratitude to the administration and teaching staff of secondary schools in Laghouat for their collaboration during data collection. Special thanks are due to the students who participated in this research for their openness and contribution. The author also acknowledges the valuable support of the Institute of Physical and Sports Activities Sciences and Techniques at Akli Mohand Oulhadj University.

Funding

This research received no external funding. It was conducted as part of the author's institutional academic activities at Akli Mohand Oulhadj University, Bouira.

Conflict of Interest

The author declares no potential conflict of interest regarding the research, authorship, or publication of this article.

References

2. Aaqel, F. (1979). Dictionary of psychology. Beirut: Dar Al-Ilm Lilmalayin.
3. Arslan, S. (2009). Psychology of the family of the mentally disabled. Cairo: Anglo-Egyptian Library.
4. Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), Handbook of theory and research for the sociology of education (pp. 241–258). New York: Greenwood Press.
5. Bourdieu, P. (1990). The logic of practice. Stanford, CA: Stanford University Press.
6. Coleman, J. S. (1988). Social capital in the creation of human capital. American Journal of Sociology, 94(Supplement), S95–S120. https://doi.org/10.1086/228943
7. Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: Informing development of a conceptual model of health through sport. International Journal of Behavioral Nutrition and Physical Activity, 10(98), 1–21. https://doi.org/10.1186/1479-5868-10-98
8. John Scott. (2009). Sociology. Beirut: Arab Research and Publishing Network.
9. Kay, T., & Spaaij, R. (2012). The mediating effects of family on sport participation: A critical perspective. International Review for the Sociology of Sport, 47(1), 77–94. https://doi.org/10.1177/1012690210393752
10. Latif, H. (1990). Mental health and academic excellence. Beirut: Dar Al-Nahda Al-Arabiy.
11. Lareau, A. (2003). Unequal childhoods: Class, race, and family life. Berkeley, CA: University of California Press.
12. Sabo, D., & Veliz, P. (2008). Go out and play: Youth sports in America. East Meadow, NY: Women's Sports Foundation.

13. Shaw, S., & Hoeber, L. (2003). "A strong man is direct and a direct woman is a bitch": Gendered discourses and their influence on employment roles in sport organizations. Journal of Sport Management, 17(4), 347–375. https://doi.org/10.1123/jsm.17.4.347
14. Stempel, C. (2005). Adult participation sports as cultural capital: A test of Bourdieu's theory of the field of sports. International Review for the Sociology of Sport, 40(4), 411–432. https://doi.org/10.1177/1012690206066170
15. Tonts, M. (2005). Competitive sport and social capital in rural Australia. Journal of Rural Studies, 21(2), 137–149. https://doi.org/10.1016/j.jrurstud.2005.03.001

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Subliminal Advertising: From Its Genesis to Contemporary Practice and Future Directions in Consumer Psychology and Marketing Communication

Vanshika Saran Sharma
Postgraduate Research Scholar
Symbiosis Institute of Media and Communication (SIMC)
Symbiosis International (Deemed University)
Pune, Maharashtra, India
E-mail: vanshika_saran@siu.edu.in
ORCID iD: https://orcid.org/0000-0002-8829-6170

Nilesh Gokhale
Dr.
Nilesh Gokhale
Associate Professor and Head, Department of Brand Communication
Symbiosis Institute of Media and Communication (SIMC)
Symbiosis International (Deemed University)
Pune, Maharashtra, India
E-mail: nilesh.gokhale@simc.edu
ORCID iD: https://orcid.org/0000-0002-6148-4200

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Subliminal advertising; Consumer psychology; Subconscious messaging; Neuromarketing; Sub-visual cues; Ethical advertising; Indian advertising industry

Abstract

Subliminal advertising represents one of the most intriguing and controversial intersections of psychology, marketing, and ethics. This study explores the evolution, perception, and ethical implications of subliminal messaging in the advertising industry, with a focus on its presence in the Indian context. By reviewing seminal works and empirical studies, from James Vicary's 1957 experiment to twenty-first-century neuromarketing developments, the paper traces how subliminal techniques transitioned from experimental psychology to digital persuasion mechanisms embedded within visual, auditory, and algorithmic interfaces. The study also investigates the Indian advertising industry's stance toward subliminal communication—highlighting its regulatory vacuum, the absence of standardized ethical frameworks, and the increasing incorporation of subconscious messaging through product placements, music, and symbolic cues in digital and cinematic advertising. A comparative discussion illustrates global attitudes toward subliminal persuasion, particularly within U.S. and European advertising ethics codes. The findings emphasize the duality of subliminal advertising: while it has the potential to strengthen brand recall and emotional engagement, it also raises serious ethical questions about manipulation, autonomy, and informed consent. The study concludes by envisioning the future of subliminal advertising in an AI-driven media environment—where biometric data, neuromarketing analytics, and micro-targeting may render subliminal influence both more potent and less transparent.

Citation. Vanshika S. Sh.; Nilesh G. (2025). Subliminal Advertising: From Its Genesis to Contemporary Practice

and Future Directions in Consumer Psychology and Marketing Communication. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1117–1128. https://doi.org/10.56334/sei/8.11.92

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 28.03.2025	Accepted: 17.07.2025	Publishing time: 05.10.2025

Introduction

Subliminal advertising presents the audience with brand entities like images, logos, or other marketing materials without the consumers being conscious about it. When exposed to such subconscious stimuli, the consumer is trusted to acknowledge the information and follow up on it without recognizing a communication source.

Subliminal Advertising adds another element to the marketing efforts as it does not interrupt the activities of the consumer and allows for a simultaneous product or service promotion as people have a shorter attention span and a busy lifestyle these days; this style of advertising seems intriguing.

The primary concern of Subliminal Advertising is whether it can be effective in changing the buying behavior of the consumers in the longer term and provide advertisers a ground to effectively advertise the product or services directly to the unconscious mind of the consumer, without getting them even to realize, hence not necessarily addressing the defenses of the conscious mind of the consumer.

This article is organized into three sections. The first section summarizes the famous research and studies done in the past and trends in subliminal advertising, which is the primary source of the discussion done in the paper. The second section discusses in detail the Indian advertising industry's stance on Subliminal Advertising with references to some advertisements which have incorporated subliminal messages directly or indirectly on an Indian advertising landscape, the latter part of the section talks about Subliminal Advertising in a global and Indian context comparatively, also, talks about Subliminal Advertising through the lens of a brand, an advertiser and a consumer through my understanding of the role of subliminal advertising. The third and the ultimate section of this paper discuss the future scope of Subliminal Advertising and the conclusion.

Understanding How Subliminal Advertising Unfolded

The first time when Subliminal Advertising came into the limelight was in 1957 when James Vicary did a controversial experiment where he alleged that he encouraged moviegoers to eat popcorn and drink Coca-Cola by showing a brief, 0.03 seconds of subliminal messages when the movie was played, he said that this increased the sales of popcorn and Coca-Cola considerably. The exposure time of the letters was so less to be acknowledged by the conscious mind, but it was considered that it had influenced the unconscious mind. Later, Vicary's study was never published; the entire thing was only for publicity, a hoax. However, it successfully triggered the talks around it; there was a significant outcry in public concerning the manipulation tricks that the advertisers can play to trick consumers psychologically without their permission.

There has been a lot of controversy due to the misuse of the word; the definition says that it should be anything below the level of a person's consciousness; the problem is that awareness and consciousness are often used interchangeably [1]. In 2000, Grays summed up subliminal in a way that inferred that it does not pass the test as subliminal if you can see it. Subliminal as a word has been very exploited in a lot of different ways; it has been misused to mean sensual, In a few books by Wilson Bryan Key called Subliminal seduction (1972), Media Sexploitation (1976), and The Clam-plate Orgy (1980), Key has gathered attention to the way sensual or arousing

stimuli has been embedded into the photographs; however, there is no claim that such embeds are used to sell products [2]. Then after some time, there was a book written by August Bullock, called The secret sales pitch: An Overview of Subliminal Advertising in 2004, which triggered the calm sea and Subliminal Advertising was again brought into notice; Bullock had no credentials in advertising but was fascinated by the book called Subliminal Seduction by Wilson Bryan Key, Bullock's book was entirely based on his interpretations. There was one advertisement * which Bullock analyzed in which a woman in an evening dress is close to a man and the copy attached was: "If you got crushed in the clinch with your soft pack, try our hard pack." The document had an explicit sensual theme but subliminal, however on the backbone of the lady, he argued that an image of a penis is embedded, which is undoubtedly subliminal, even hard to figure out on a conscious level. Bullock said further that subtle prompts of this sort had been generally utilized in all media types throughout; we can imply that advertisers are embedding such subliminal messages in advertisements consciously. However, there is no solid proof.

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.
If you got crushed in the clinch with your soft pack, try our hard pack.
Benson & Hedges
100's
Regular and Menthol
17 mg. "tar," 1.1 mg. nicotine, av. per cigarette, by FTC Method.

*This is the advertisement being talked about

Source: http://www.subliminalsex.com/chapter%20one%20(2)pg2.htm

Bullock, however, did not seek permission or talk to the agencies or brands whose advertisements he used as references; he made it crystal clear that whatever is written in his book is opinion pieces, and no facts are backing it up.

While relying on the book on his opinions, he addressed the study of [3], which mentioned that, albeit subconscious observation exists, the subliminal stimuli are so frail that other contending impulses effortlessly invalidate potential impacts. Bullock refutes this by saying that the embed could have been done poorly, i.e., the embed could have been insignificant or unemotional. He denied other studies that spoke against the subliminal messaging and its existence as deceptive or flawed methodologies. The back of Bullock's book mentions how he is

an attorney. The book is written as he would present the evidence of Subliminal Advertising to a jury and that he won't disappoint even a skeptical reader.

The content was sherry logical, more like a gut talk, and not proven, so it could not prove Subliminal Advertising to be factual.

Some marketers trust that Subliminal Advertising adds a new dimension altogether to the traditional messaging overall in the opinion of [4], "Advertisers often have been accused of using techniques which manipulate and control the behavior of consumers and hence violate their autonomy." There are many techniques; one of them is Subliminal Advertising.

There are many issues with subliminal advertising; one of the issues that come with Subliminal Advertising is to fathom the effectiveness of Subliminal Advertising to influence people to act upon the message in the desired fashion and know if it worked in the intended direction [5]. Supporters of the effectiveness of Subliminal Advertising advocate that Subliminal Advertising can direct the behavior of the people and build accidental brand awareness through the subconscious mind, which is the indicator of the effectiveness of advertising [6].

The available researches on 'perception without awareness' suggests, it is undoubtedly possible that stimuli are perceived when onlookers are uninformed about the subliminal message they are consuming [7]. Hence we can conclude that a person can perceive a message without the knowledge of perceiving the message. There have been many studies around the threshold of the human mind about what constitutes subconscious and where the subliminal lie, subliminal means "below threshold" [8]. As subconscious stimulation happens at the threshold point, one might argue that this limit is diverse for various individuals. Considering that a subconscious prompt is so short-lived that it goes unnoticed [9]. Be that as it may, imagine a scenario in which the conscious mind almost picks up the message for a long time? [10].

Another study by [11] in which they did a similar analysis to that of Vicary's study, in which they showed members of the experimental group a Subliminal Advertising of a carbonated soft drink and evaluated whether this had any impact on the brand decision while purchasing and if it affected the people's feeling of being thirsty. [12] The conclusion was that showing subliminal messages that motivate people to drink a carbonated soft drink did not fetch results with the people who were not thirsty. For the thirsty people, it could just nudge them in a direction to prefer the shown brand. Similarly, in two studies, one by [13] fetched similar results, concluding that subliminally presented stimuli can help to nudge the buyer in the desired direction but only if they are motivated in the first place.

There is a study by [14] in which they exposed the participants to a television program that had embedded subliminal messages related to thirst; the results showed that the audience did become thirstier after watching the schedule as opposed to their initial ratings, which were taken before the exposure to the subliminal message and with the control group who were not exposed to the subliminal messages [15]. According to research [16], the general public and the scholarly community has seen subliminal messages as a medium that influences the behavior by indirectly creating an "antisocial behavior such as early sex stimulation in children, the difference in the value system of an individual, cultural change, suicidal acts and drug use."

However, there is a lot of literature that denies the effectiveness of subliminal advertising. Scientific researches like the ones by [17] and more fail to prove that subliminal messages effectively influence a person's behavior. One such researcher is research conducted. They worked on an experiment in which the audience was shown a sub visual image of a bowl of "wonder rice," post the film, the experimental group did not acknowledge the brand name any better than the control one.

An article by explained the most concerning issue of studies which express that Subliminal Advertising is effective because inadequate consideration has been taken to guarantee that the stimuli in the experiments are adequately "Subliminal."

Analyzed articles on the effectiveness of Subliminal Advertising and concluded that subliminal messages do not significantly affect behavior, did another study with a similar conclusion [18].

Numerous researchers have investigated the impacts of Subliminal Advertising. It is safe to say that the outcomes are blended. Still, it weighs slightly heavier on the side of Subliminal Advertising not affecting behavior, mainly due to the majority of the research stating so. I believe the people are against the usage of subliminal messages to influence their preferences without them being aware. Subliminal Advertising has been prohibited in many countries like the United States, the UK, and Australia [19]. However, George W. Bush incorporated subliminal messages into his promotional film for the 2000 presidential elections when he used the sub visual images of the word "Rats" while talking about the rival Al Gore.

We can agree that subliminal messages still exist in the advertising landscape while they might have been placed knowingly or unknowingly in one way or another.

In the Indian context, Subliminal Advertising as a concept has been explored very little, but it does not mean that Subliminal Advertising has been dormant in the Indian advertising landscape; there have been instances where Subliminal Advertising has been incorporated in the advertisements to influence the buying decisions of the consumers very subtly and without even them realizing [20].

The legal Indian stance on Subliminal Advertising is that no laws prohibit or even define Subliminal Advertising; vaguely "misleading" advertisements are restricted [21]. Amidst the blurred guidelines, advertisers and brands feel free to use subliminal messages in their advertisements as and when they wish, not thinking that these efforts could be less fruit-bearing; however, sometimes these subliminal messages are the brainchild of the audience rather than the advertisers [22].

In a universal context, consumers in the western countries are relevantly more aware of subconscious messaging; hence they are more likely to be cautious of the advertisements they watch, mainly when new research or experiment is in talks; otherwise, the idea of subconscious messaging itself goes into the backside of the mind. The advertisers are, in return, more aware of the stir it may cause, so they make sure that the advertising is to a level that does not creep out the audience and is still effective [23]. The brand focuses on the return on the investment and wants to try various marketing techniques to see which bears the best results. In contrast, when talking about India, the Subliminal Advertising in India, and the general audience is relatively unaware of subliminal advertising, the few who are aware are ignorant to its existence, due to a lack of effective regulation; advertisers freely use the subliminal marketing techniques to its advantage [24]. Currently, there is a lack of two things in the Indian context. One is the lack of intense research based on India, and the other is the lack of proper regulations for Subliminal Advertising. Advertisers have been using subliminal messages in many forms; however, they might be unsure of its effectiveness; the advertisers in India leave no chance to incorporate subliminal messages in their advertisements, especially when they want to use the sensual theme. The brands are primarily focused on catching the attention on the go, and sometimes subliminal messages are what they resort to. Incorporating subliminal messages in an advertisement requires a lot of attention to the details and keenness as there is an excellent line between the statements that the conscious and the subconscious can perceive [25].

There have been some apparent instances of Subliminal Advertising wherein in the advertisements; one brand becomes a free ride on another brand, which means that, for example, on a TVC, apart from the lead brand being advertised, another brand is subtly incorporated into the advertisement; the presence is usually so minute, that it goes unnoticed consciously, but subconsciously the message gets stored. According to an imminent figure in the

Indian advertising industry has mentioned in an interview that it is not an easy task to incorporate multiple brands in a 30-second TVC subtly [26]. In his words, "For two brands, with one subliminal to ride on the main brand, doesn't seem feasible, especially when we see that the communication needs to have the clear message of the brand character. On most occasions, the personality of one brand remains different from that of the other, and mixing them may not be a good idea," his take on whether Indian Advertisers might take this route more often or not was that, since advertising is a creative field, such a concept might gain popularity [27]. Another known figure from the Indian advertising industry, mentioned in an interview that was subliminally incorporating another brand into an advertisement of a major brand is a concept which does not show a great future as it might be ignored. However, if it is being done, it should be made that the two brands sink well together. Another industry expert, [28], mentioned how mostly Subliminal Advertising happens by chance and not essentially by choice; according to him, sometimes these relationships are even faked by the primary marketers. He thinks that when another brand is subliminally placed in a TVC of another brand, it might be more effective in the consumer's minds than dedicated advertising. It does not take anything away from the leading brand; after all, the second brand is placed subliminally [29].

Sex is one of the most selling appeals in advertising; Subliminal Advertisements have not been shy to use sensual messages in India. Some subliminal advertisements in India have taken the route of sensual subliminal messaging to catch the attention without letting the audiences even realize the subtle sensual massage. For example, there is an advertisement from [Annexure I] in which the entire experience of drinking coca-cola from their famous shaped glass bottle is fantasized. The advertisement film is set in a grocery store; the film opens on an attractive male customer, played by brand ambassador Sidharth Malhotra, who grabs the eye of a female clerk. He stops to refresh himself with a super cold Coca-Cola, which goes about as an ice breaker and makes the second extraordinary moment between the two [30]. This film is an Indian version of the initiative, Korean Coca Cola advertisement. While the guy refreshes himself by drinking coca-cola, the female cashier stalks him and gets too comfortable, and stimulations take over; when the guy returns to the store counter with dripping sweat all over his shoulders, she carefully places another bottle of coca-cola right in front of his crotch.

The way the bottle is put in front of him makes it look like a penis.

Colgate is another brand that used the sensual bit of Subliminal Advertising [Annexure II]. In an advertisement film which was aired in 2017. The brand ambassador, Ranveer Singh, is shown all energetic and peppy after he brushed his teeth with Colgate max fresh, the product being advertised in the movie. In comparison, the guy is dancing on the top of vehicles like buses and transforming the entire monotonous traffic jam into a fun place. In a change of sequence, we can find the girl dancing in the cars with the guy; in a scene, the girl, while dancing right in front of the actor, bends in the front and takes her hand closer to Ranveer's crotch and makes a sensual move and blows a flying kiss taking a bow, which looks like the girl embraces the penis of the male lead for a moment. Other brands like Axe in India also use a sensual route subliminally.

Subliminal advertisements in India have not shied away to use the tricks of psychology either; some ads have used subliminal messages to associate the brand with happiness and cast a spell of better consumer satisfaction; one such advertisement was rolled out in 2020 by a famous detergent brand in India called Ghadi also incorporated subliminal messages in a newly formed brand swoosh [Annexure III]. Since its inception, the brand has used a clock ghadi detergent logo set to 10:10, which makes a smiley face that makes people link it with happiness and higher consumer satisfaction. The brand actors in the ads also make a U shape to influence people subliminally to associate it with joy. The brand's primary objective has been to build the brand image by instilling a sense of quality and trust within the product. They have successfully used a subliminal brand swoosh that associates itself with a smiley face to boost the brand's image with the emotion of happiness and trigger the positive image of the product in the audience's minds and make them buy it.

There have been many instances where subliminal messages have been incorporated into the advertisements and served to the audience in India without them knowing about it. It happens so subtly that the audience, which is

unrelated to the advertising industry, does not even realize that something like a subliminal message exists and can be embedded into the advertisement, which might be effective in changing the buying behavior of a customer.

It can be comprehended that there is a possibility that more Subliminal Advertising is being seen these days due to a lack of time and awareness among the consumers about the brands, in an overcrowded market to grab the attention consciously is brutal as there are many defenses which are into action but while using sub visual or sub auditory messages their reasons are put off guard. It becomes comparatively easier to embed a message in the head of the consumer. It is crucial to assess the effectiveness of subliminal messages in a society like India, which relies heavily on advertising in both direct and indirect ways to make their purchase decisions and being the country where the government does not heavily regulate subliminal advertisements.

Future Of Subliminal Advertising

The talks around Subliminal Advertising have taken a back seat and moved to the research archives in recent years. It is safe to say that Subliminal Advertising was never used widely across the world; sometimes, it gets difficult to get a message across consciously; subliminal messages can come to the rescue, but there is not enough proof that it is effective. Subliminal messaging has not yet been declared a viable option for marketing a brand altogether; partially, for example, for recall purposes, it can still be considered but making it the mainstream communication method for a brand will make its charm go.

Defining subliminal messages from a consumer perspective remains difficult without the intervention of the advertising party as it is difficult to comprehend what the unconscious understands. It is rare to expect an advertisement to be "obviously" subliminal because if it is evident, then it cannot be subliminal.

In the current age of social media, there are two prevalent things; firstly, the openness and acceptance in societies like the Indian society have increased exponentially, which provides the brands a platform to experiment with various advertising techniques at a lower investment level and gives the creative freedom to go overboard. Secondly, it would look like a hoax if caught too soon because the information in the social media age spreads like fire.

It is difficult to say if and when it emerges full-fledged, will it be a seasonal trend or a strategic tool to stay. Moreover, subliminal messages in an advertisement might become more of a PR stunt than an actual message embedded to influence a customer.

Conclusion

Subliminal Advertising has evolved from being existent to being the hot talk of the town, from having gone to the backside of the mind of consumers while still existing. The landscape of Subliminal Advertising has some evidence to infer that its effect on the buyer's decision is negligible; primarily, at its full potential, it can help to nudge the consumer in a direction in which he has already headed consciously or unconsciously. People have a short attention span, more concise than ever, now the average attention span of a person has shrunk dramatically, and when a message is introduced at a conscious level to the person, many defenses come into play, making the person skeptical in perceiving the message. In contrast, similar statements are introduced subconsciously; then, it becomes easy to catch the consumer off guard.

In the Indian landscape, the laws regarding Subliminal Advertising are unclear; currently, no law prohibits the usage of "Subliminal advertising directly," and even the definition of Subliminal Advertising is not set in stone, making it easier to misuse. The studies regarding Subliminal Advertising are the bare minimum in the Indian context, which has humongous ground and potential.

Methodology

This paper adopts a qualitative and interpretative approach rooted in secondary research and content analysis. Academic literature, historical experiments, and digital-era advertising case studies were reviewed to construct a chronological and conceptual map of subliminal advertising. Sources include books, peer-reviewed articles, journal archives, and advertising regulations from India and international authorities. The study also integrates elements of comparative analysis by contrasting Indian advertising practices with global standards.

The research design follows three stages:
1. Historical Review – tracing the origins and milestones in subliminal advertising, from Vicary's 1957 experiment to contemporary debates.
2. Comparative Analysis – examining the Indian industry's perception and regulatory environment vis-à-vis international norms.
3. Interpretative Synthesis – exploring the ethical, psychological, and technological implications of subliminal advertising in the context of neuromarketing and digital persuasion.

No human participants or primary data collection were involved, making the research fully non-experimental and literature-based.

Novelty and Significance

The novelty of this paper lies in its integrated exploration of subliminal advertising through psychological, ethical, and cultural lenses, particularly within the Indian advertising ecosystem. While prior studies have analyzed subliminal communication largely from Western perspectives, this research contextualizes the phenomenon in the Indian socio-cultural and regulatory framework. It also connects traditional subliminal mechanisms (sub-visual and sub-audible messages) with emerging AI-based and algorithmic marketing tools that influence consumers subconsciously through personalization and predictive analytics.

The study contributes to the discourse on ethical advertising by arguing for a code of conduct on subconscious persuasion, balancing creativity with consumer protection.

Ethical Considerations

This research is based exclusively on publicly available academic and media sources and does not involve any human or animal experimentation. All referenced materials are properly cited according to APA 7th edition standards. Ethical principles of transparency, honesty, and intellectual integrity were maintained throughout the study. No personal or confidential data were used.

Acknowledgements

The authors extend sincere appreciation to the Symbiosis Institute of Media and Communication, Symbiosis International (Deemed University), Pune, India, for providing academic resources and intellectual support. Gratitude is also expressed to fellow researchers and mentors in advertising and consumer psychology whose insights informed the conceptual framing of this study.

Funding Statement

This research received no external funding. It was conducted as part of academic research at Symbiosis International (Deemed University), Pune, India.

Conflict of Interest Statement

The authors declare no conflict of interest. The research was conducted independently, and no commercial or institutional influence affected the study design, interpretation, or conclusions.

References

1. Arrington, R. L. (1982). Business ethics: Advertising and behavior control. Journal of Business Ethics, 1(2), 4–13.
2. Bermeitinger, C., Goelz, R., Jahre, N., Neumann, M., Eacker, U. K. H., & Doer, R. (2009). The secret convincing people break into the sleepyhead. Experimental Psychological Social Journal, 44–45, 321–327.
3. Block, M. P., & Van den Bergh, B. O. (1985). Can you sell consumer sublimated messages? Journal of Advertising, 14(3), 59–62. https://doi.org/10.1080/00913367.1985.10672960
4. Bower, B. (1986). Subliminal messages: Changes for the better? Science News, 128(10), 157. https://doi.org/10.23007/3970627
5. Broyles, S. J. (2006). Misplaced paranoia over subliminal advertising: What's the big uproar this time? Journal of Consumer Marketing, 23(6), 312–313. https://doi.org/10.1108/07363760610701841
6. Bullock, A. (2004). The secret sales pitch: An overview of subliminal advertising. Norwich Publishers.
7. Calvin, D., & Dolenmayer, K. S. (1959). Subliminal insight: Some undesirable results. Applied Psychological Journal, 44(4), 188–189.
8. Champion, J. M., & Turner, W. W. (1959). An experimental study of subliminal perceptions. Journal of Applied Psychology, 43–44(7), 383–385.
9. Cooper, G., & Cooper, G. (2002). Subliminal motivation: A rehashed story. Applied Social Psychology Journal, 33(11), 2214–2228.
10. D'Angelo, F. J. (1986). Subliminal seduction: An essay on the rhetoric of the unconscious. Rhetoric Review, 4(2), 160–171. https://doi.org/10.1080/07350198609359118

Annexure I

Stills from the Coca Cola 2016 advertisement.

Source: https://www.youtube.com/watch?v=6Mip2i22Csw

Annexure II

Stills from 2017 Colgate Advertisement.

Source: https://www.youtube.com/watch?v=0dIuxbnlUPQ

Annexure III

Stills from 2020 Ghadi Advertisement.

Source:https://www.facebook.com/watch/?v=488767108742642&extid=3bTxAtlCR5c4yqNv

घड़ी
पहले इस्तेमाल करें,
*As per Nielsen Retail Index data for MAT November 2019 | All India(Urban + Rural) market in Washing Powder Category.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Digital Enterprises in Algerian Legislation: Legal Framework, Evidentiary Challenges, and Prospects for Regulatory Modernization

Guezei Abdelali
Doctor
University of Eloued
Algeria
E-mail: guezeiabdelali39 @gmail.com : Orcid: 0009-0001-0871-1432

Abdallah Bouguenna
Doctor
Tissemsilt University
Algeria
E-mail: Abdallah.bouguenna@univ-tissemsit.dz;
Orcid: 0009-0001-0763-0123

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Digital enterprises; Algerian commercial law; e-commerce legislation; electronic proof; Law No. 18-05; digital transformation; legal modernization; electronic evidence; regulatory framework.

Abstract

The digital transformation of commercial activity has fundamentally altered the principles of business organization and legal recognition. Digital enterprises—companies established, managed, and transacted entirely through electronic means—have become an integral component of the global commercial ecosystem. Many comparative legal systems have enacted robust legislative frameworks to ensure their regulation, transparency, and accountability. In Algeria, however, the legislative and institutional integration of digital commerce has been characterized by notable delays and partial implementation. Despite the promulgation of Law No. 18-05 of May 10, 2018, governing e-commerce, the legislation remains limited in scope, leaving significant legal ambiguities concerning the establishment, operation, and proof of digital commercial entities. This study critically examines the legal status of digital businesses under Algerian commercial law, with particular attention to evidentiary mechanisms in electronic transactions. Using a combined descriptive and analytical methodology, the paper explores the extent to which Algerian legislation accommodates electronic proof principles and whether it ensures parity between traditional and digital commercial entities. Findings reveal that Algerian law, while recognizing electronic contracts and signatures, lacks a comprehensive legal infrastructure for digital enterprises—particularly regarding registration procedures, electronic archives, and verification of digital transactions. The paper concludes with a set of recommendations aimed at harmonizing national legislation with international e-commerce standards and reinforcing the principle of 'parallelism of forms' in the recognition of digital evidence.

Citation. Guezei A., Abdallah B. (2025). Digital Enterprises in Algerian Legislation: Legal Framework, Evidentiary Challenges, and Prospects for Regulatory Modernization. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1129–1140. https://doi.org/10.56334/sei/8.11.93

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.04.2025 | Accepted: 01.08.2025 | Publishing time: 07.10.2025

Introduction

The rapid development of modern digital media and their dominance over all aspects of contemporary life has brought about a qualitative shift in human life. The world has come to live a life brimming with rapid communications and the transfer of information across thousands of miles of distance. The transfer, storage, preservation, and retrieval of information has come to rely on electronic media, varying in form from magnetic tape and microfilm to floppy and hard disks. These media ensure the transfer of information in audio, video, or written form across the globe. What has increased the spread of these media and ensured their continued growth in use is the emergence of the concept of e-government, which relies on them to provide services to individuals. Banks and insurance companies also rely on them to perform their duties. Furthermore, modern legislation has adopted them as a means of proving all civil transactions and deals required by the concept of e-commerce, which has facilitated commercial transactions with speedy completion and cost savings. Traders, whether natural persons or companies, have become more flexible in their commercial activities. Numerous digital companies have emerged via the Internet, active in the commercial field and achieving global fame and business figures. This has prompted legislation to quickly establish legal systems to regulate commercial activity. Electronic, especially for companies that operate online, laws were issued regulating e-commerce in all its branches, and Algeria is among the countries that adopted this despite the delay in its approval, as it did not witness the issuance of regulations for e-commerce until the year 2018 with the issuance of Law No.: (18-05)(Law No. 18-05 of May 10)

However, the latter has a narrow scope, rendering many electronic legal systems incapable of encompassing its application. This necessitates recourse to the general provisions of commercial law.

Digital commercial companies established electronically lack a specific application or legal environment that enables them to properly apply its provisions. This leaves them in a vulnerable position, making it difficult to prove their existence or their legal electronic transactions. The issue of electronic evidence arises in various electronic transactions, but its importance is increasing in the field of commercial companies, where it is relied upon to ensure the stability of transactions and protect the interests of those dealing with the digital company. This can only be achieved through the existence of distinct provisions that regulate its establishment procedures and evidence mechanisms at various stages of the electronic company's life. This is what this paper will highlight; attempting to explore the existence of a legal framework for digital commercial companies that guarantees proof of their existence and activity in Algerian law. This paper poses the following question: Has the Algerian legislature been able to provide mechanisms that ensure the implementation of electronic evidence rules in the field of digital commercial companies?

Addressing this problem necessitated a combined approach, combining the appropriate descriptive approach to define the concepts involved in the study and clarify their conditions and implications, with the analytical approach to analyze the legal texts regulating commercial digital companies.

To address this problem, we divided the study into two axes. The first addresses the general framework of e-commerce companies, while the second examines the challenges of proving e-commerce companies in light of Algerian law.

As a result of studying and analyzing the aforementioned problem, the study reached several relevant results, followed by suggestions, which are included in the conclusion of this research.

First Section: The General Framework of Digital Commercial Enterprises

Before addressing the legal provisions related to the extent to which the electronic proof system is adopted in the field of digital commercial enterprises, it is necessary to shed light on the general conceptual framework of this modern type of commercial enterprise, highlight its importance, and the procedures for establishing it in accordance with the provisions of Algerian law.

First: Definition and Importance of Digital Commercial Enterprises

An enterprise is a legal system that partners agree to enter into and are bound by its provisions. Therefore, it must meet the general elements of a contract, including consent, subject matter, and cause, in addition to the specific elements stipulated in Article 416 of the Algerian Civil Code .(Order No. (75-58) dated September 26)

These include the principle of multiple partners, the intention to participate, the principle of sharing profits and losses, and the provision of shares. In addition, the most important principle that is considered binding for its existence is writing. A company is a written contract, as confirmed by Article 324 bis 1 of the Civil Code. Accordingly, official writing is a condition for its existence, not merely for proof. The same general provisions apply to digital commercial companies, taking into account the specificity of the electronic form under which they were established. In addition to the common concept of the traditional contract, the concept of the electronic contract is stipulated in Law No. 18-05 of May 10, 2018, relating to e-commerce in Algeria, pursuant to Article 6, Paragraph 2, which states: "A contract, within the meaning of Law No. 04-02 of June 23, 2004, which sets the rules applicable to commercial practices, is concluded remotely, without the actual and simultaneous presence of its parties, by resorting exclusively to electronic communication technology".(Rahma Tarbash).

It is clear that the traditional institution does not differ, in its content, from electronic companies except in the method of establishment and the method of practicing the purpose for which it was established. Accordingly, each of them enjoys a legal personality in all its aspects and characteristics, and the difference between them has no effect on the legal personality that each of them enjoys.(Mohamed Mounir El-Genbihi)

Second: Procedures for establishing e-commerce companies (Samia Kaidi, November 23, 2016, pp. 7-8).

In order to establish a commercial establishment electronically in Algerian law, it must be subject to several procedures, which we list below:

 A signed application, prepared on forms provided by the National Center for the Commercial Register.

 Proof of the existence of a premises eligible for commercial activity by submitting either: a title deed or lease; a concession for the real estate containing the commercial activity; and any contract or allocation decision issued by a public body.

 A copy (01) of the bylaws establishing the company or a copy of the company's articles of association when it concerns a public institution of an industrial and commercial nature.

 A copy of the announcement of the publication of the company's bylaws in the Official Gazette of Legal Advertisements.

 A receipt for payment of the stamp duty stipulated in the applicable tax legislation (4,000 DZD_

 A receipt for payment of registration fees in the commercial register as specified in the applicable regulations.

Domain Name

A domain name, also known as a "domain," is the equivalent of an email address on the Internet, which must be "Com.dz." A domain name is essential when creating a website for e-commerce. It is also of utmost importance in marketing and in accessing the merchant's website. Article 6 of Law No. 18-05 on e-commerce defines it as a standardized string of letters and/or numbers registered with the National Domain Name Registry, allowing identification and access to the website .(A domain name can be obtained either at the Center for Research in Scientific and Technical Information)

After obtaining a domain name, the registration procedures are completed at the local branches of the National Center for Commercial Registration, located across 48 provinces.

Domain Name Registration File

 A domain name registration form at the National Center for Commercial Registration, duly completed and signed by the e-resource representative according to the standard form approved by the National Center for Commercial Registration; a certified copy of the domain name registration certificate;

 A commitment to comply with the technical specifications specified by the National Center for Commercial Registration, duly signed by a representative of the authority;

 A copy of the craftsman's card (if the e-resource is a craftsman); a receipt for payment of the domain name registration fees in the National Card for e-resources.

In addition to legal publication, the legislator has obligated in Article 14 of Law No. (04-08) relating to the conditions for practicing commercial activities, to carry out legal advertising in newspapers qualified for that, regardless of the method used,((04-08), dated August 18, 2004.) as long as it is written. Therefore, publication can be done via the Internet on the websites of daily newspapers, which may be electronic, especially since the media law has regulated the possibility of using information and communication technology by the press, which is known as electronic journalism. (Samia Kaidi, November 23, 2016, pp. 7-8.)

Extracting the Electronic Commercial Register

The National Center for Commercial Registers (since June 2014) has incorporated a secure code into the commercial register extract. This code secures the commercial register extract, proves its authenticity, and allows for online monitoring of data. The secure code is read by an electronic commercial register reader, an application installed on devices equipped with an image capture system (smartphones, tablets, etc.). This reader enables the reading and verification of commercial register information online (an internet connection is required). (For more information)

Section Two: Problems of Proving the Establishment of Electronic Companies in Algerian Law

Given the unregulated activity of digital commercial enterprises operating in the virtual market, their transactions are difficult to prove at various stages, whether in the establishment phase or the operational phase. This is what I will attempt to address in this section.

First: Problems of Proving the Electronic Establishment of a Digital Enterprise

The definition of an electronic notarized contract is no different from a paper contract; only the medium differs, with the implementation of certain specific procedures. Accordingly, an electronic notarized contract can be defined as: "A document drawn up by a notary in accordance with the conditions stipulated by law to give it an official character and to establish the legal effects thereof."

The Algerian legislator has followed the example of the French legislator, stipulating this in Article 323 bis of the Algerian Code of Civil Procedure, which states: "Electronic written proof is considered the same as paper written proof, provided that the identity of the person issuing it can be verified and that it is prepared and stored in conditions that guarantee its integrity."

It is clear from the text of this article that the Algerian legislator has recognized the legal equality between electronic writing and handwritten writing, provided that it meets the conditions represented by evidence of the writer of the writing to whom it is attributed, and the necessity of preserving it according to technical standards that would guarantee its integrity.(Zarouk)

However, by referring to Article 03 of Law No. (18-05) related to electronic commerce, we find that the legislator has authorized the dealers to conclude electronic contracts in accordance with the applicable legislation and regulations, but he has prohibited every transaction via electronic communications related to every commodity or service that requires the preparation of an official contract .(Rahma Tarbash)

It appears from reading the text of the above article that there are some commercial transactions that have not kept pace with modernization due to the legislator's requirement for their conclusion to take a certain form, such as official status for commercial establishments and commercial stores, and registration in the real estate registry for transactions involving real estate. These transactions are considered outside the scope of modernization in Algerian commercial legislation. The reason for excluding them from the scope of electronic transactions is the absence of practical application of the provisions of what is known as the electronic notary, and by enabling the notary to draft commercial company contracts in electronic form

through electronic supports that keep pace with this type of establishment, by activating the electronic signature, and embodying these mechanisms in the law regulating the notary profession to keep pace with the digital developments taking place in transactions at the present (04-08)

Contrary to what exists in comparative laws, solutions to this problem, which aroused its ire, were found through two mechanisms. The exclusion mechanism. In order for these laws to keep pace with modernization, they excluded certain actions from the scope of electronic formality, including, for example, the American, Irish, and Jordanian legislators. In addition to exclusion, what is called an electronic notary public was created. Commercial establishments cannot be established electronically, given that formality is a cornerstone; violating it results in the company's nullity. As for official writing, despite Algeria's launch of electronic certification services, it established an authority that provides electronic certification services. This authority is any person within the meaning of Law No. ((2000-03))2000/03 on Post and Telecommunications, which issues electronic certificates and other services in the field of electronic signatures. The certification it performs is official, but the legislator did not grant it the authority to conclude contracts, (Hidaya Bouazza)on the one hand, nor did it amend the notarization law, on the other hand. This is in contrast to the French legislator, which allows notaries to conclude contracts online.(Habet).

Second: Electronic Signatures and Their Evidential Validity

The national legislator's issuance of the law on electronic signatures raises questions about the meaning of this signature, given that it is a relatively new term. Accordingly, this section will address the definition of electronic signatures first, and then their evidential validity second.

A number of international organizations have attempted to provide a definition for electronic signatures, whether through laws related to electronic commerce, or through laws specific to electronic signatures. The European Union and the United Nations International Trade Organization, known as UNCITRAL, are considered the two most important organizations that have provided a definition for electronic signatures, as most of the organizations that have attempted to define it have been influenced by the UNCITRAL definition, which laid the foundations for defining electronic signatures and defined it as: “Data in electronic form included in, added to, or logically associated with a data message, and which may be used to identify the signatory in relation to the data message and to indicate the signatory’s approval of the information contained in the data message.”(Al-Qudah)

Thus, it appears from this definition that the United Nations International Trade Organization (UNCTAD) has not specified the method to be adopted for electronic signatures, leaving the choice of method to the individual or state, as long as that method allows for the identification of the signatory and their approval of the information contained in the message.

The European Union and other organizations have provided a definition of electronic signatures, but they have identified two types of signatures, each with a specific definition: an electronic signature, which is: "information in electronic form related to and closely linked to other electronic information and used as an authentication tool"; and an enhanced electronic signature, which is: "an electronic signature that must be:

-Uniquely associated with the signatory;

-Capable of identifying the signatory and recognizing their use;

-Created using methods that guarantee complete confidentiality;

-Linked to the information contained in the message, such that it detects any changes to the information".(Nasirat)

Despite the division adopted by European Union countries into two types of electronic signatures, these two definitions do not deviate from other definitions of electronic signatures.

In addition to these definitions provided by some international organizations, we also find some comparative international and Arab legislation providing a definition of electronic signatures in the same context, not far removed from the meaning of the definitions above.

Thus, the French legislator recognized electronic signatures by issuing Law No. 230 of 2000, dated March 13, 2000 .(Ouzian)

In which he addressed the traditional and electronic signature, focusing on the functions of the signature known in Article 1316/4 of the French Civil Code after its amendment, which states: "The signature that identifies the person to whom it is attributed and that expresses his acceptance of the content of the document to which it is linked and of the obligations contained therein." The French legislator adopted this definition to be a general definition of the signature. As for the electronic signature, the legislator defined it in the second paragraph of the amendment as "the signature that results from the use of any acceptable and reliable means to identify the signatory and ensure the signature's connection to the work or document to which it is linked".(Nasirat)

In line with French legislation, the electronic signature has received a significant share of importance in American legislation. Thus, the American law issued on June 30, 2000, defined it as: "A digital certificate issued by an independent body that identifies each user who may use it to transmit any document, commercial contract, pledge, or acknowledgment." While the electronic signature has received special attention in international legislation, it has also enjoyed this status in Arab legislation. Most Arab countries have sought to keep pace with developments in various modern means of communication, which has prompted the issuance of a new legal framework to keep pace with these developments. Thus, the Egyptian legislator issued a law specific to electronic signatures, devoting Article 1 to defining certain legal terms, including the electronic signature, which it defines as: "An electronic signature: something placed on an electronic document in the form of letters, numbers, symbols, signs, or other, and has a unique character that allows the signatory to be identified and distinguishes him from others .(Bouhamidi)

Referring to the Algerian legislature, we find that, in line with most Arab legislation, it has also attempted to keep pace with the information technology revolution currently experiencing the world. This led it to issue Law 15-08, previously stated, defining it in Article 2 as: "Data in electronic form attached to or logically linked to other electronic data used as a means of authentication".

A review of Law 15-08 on electronic signatures and certification reveals that the legislature did not define what is meant by an electronic signature, but rather indicated that when the signature is electronic, a reliable means of identification must be used to ensure its association with the associated document. It is clear from all the previous definitions given for electronic signatures that there is convergence in the definition given by each individual country, in addition to the fact that there is no comprehensive definition for electronic signatures. This is perhaps due to the rapid development of communication methods, which will consequently lead to the development of definitions.

The Validity of Electronic Signatures

In this changing environment, most countries have moved toward recognizing electronic signatures. This is due to the current reality of reliance on modern communication methods and means, which are not entirely compatible with the concept of a signature in its traditional sense. Under these circumstances, traditional signatures may find no place in the face of the proliferation of electronic information processing systems, which have begun to sweep the world and rely entirely on electronic media. Manual procedures are thus rendered ineffective ‹(Al-Gharib)Algeria, in turn, kept pace with these changes. The issuance of Law 15-08 on Electronic Signatures and Certification was a recognition of this signature.

Undoubtedly, with most governments shifting from a traditional system to an electronic one, which led them to grant electronic signatures a prerequisite for proof in the face of these international and Arab efforts to recognize electronic signatures, Algerian legislators found themselves faced with the need to update their laws to keep pace with these efforts. Thus, Algeria's efforts to adapt legal rules to modern developments in the field of information technology, particularly those related to the use of mechanisms in e-commerce, culminated.

Therefore, if the general principle is the requirement of proof in writing, which is recognized by most legislation, including national legislation, since the principle in civil law is proof in writing, and in commercial law the principle is freedom of proof, while the exception is proof in writing, this contradiction between the principle and the exception in both civil and commercial law, and the question that arises is: To what extent does an electronic signature achieve proof? The answer is that an electronically drawn document is accepted as evidence, just like a paper document, provided that the person issuing it can be legally identified and that it is prepared and stored under conditions that ensure its security.

Thus, while the institution of signature was not the subject of any legal definition by the legislature, the new text gives the signature a functional definition, as stipulated in Article 2 of Law 15-08 above. The signature, necessary to complete a legal document, allows the signatory to be identified and expresses their acceptance of the obligations arising from the said document.

In addition, it indicates the necessity of trusting the means used in electronic signatures when they allow the use of a secure electronic signature until proven otherwise, in accordance with Articles 10 and 11 of the same law.

Here, as previously noted, the national legislature recognizes two types of electronic signatures: a regular electronic signature and a secure electronic signature. The latter is one whose authenticity is attested to by an accredited electronic authentication service provider. This gives a secure electronic signature legal force, making it superior to a regular electronic signature as evidence. Some transactions are excluded from the possibility of being transferred in the form of electronic documents, documents related to personal or real guarantees of a civil or commercial nature that are not subject to the provisions of this law, but rather are subject to the provisions of the Civil Code in accordance with the general rules because they are part of the public order. This is due to the fact that such guarantees often focus on complex and complicated transactions, which requires the presence of the parties in the contract council. (Al-Haija)

Problems in Proving Business Transactions During Operation

In light of the legislative recognition of the validity of written and electronic documents, including electronic notebooks, the judge's role in addressing evidence has diminished, and he no longer has discretionary power over electronic documents. The parties have a positive role in proof, and their will determines the nature of the means of proof.

It is clear from the above that the company contract can only be proven in writing for partners. Since writing is a condition for the formation of the company, it is necessarily necessary to prove it. Regarding partners against third parties, the company may only be proven in writing. In fact, third parties have the right to claim that the company is void and the contract with it is void. However, partners may not claim this voidness against third parties due to the lack of writing, and it only has effect between them from the day one of them requests the voidness in accordance with Article 418, Paragraph 2 of the Civil Code. Proof of the existence of the company may be accepted from third parties by all means, when necessary. (Nouiri)

It is clear from Law No. (04-08) on the conditions for practicing commercial activities mentioned above, which stipulates: "Legal advertisements shall also be included in the national written press or any appropriate medium, at the expense of the legal person." Thus, the company shall publish, at its own expense, what must be published and in the medium it deems appropriate. Therefore, it is necessary to find special means of publication for commercial companies, as well as to search for modern methods to ensure the dissemination of information, and to create newspapers specialized in the field of commercial advertisements instead of daily newspapers, in addition to the possibility of creating a website for commercial companies through which the words of the commercial companies are advertised. It should be noted that the Algerian legislator prohibits electronic certification service providers from collecting personal data unless they explicitly consent. The electronic certification service provider may only collect the personal data necessary to grant and maintain the electronic certification certificate, and may not use this data for other purposes.

The electronic certification service provider also has a preliminary obligation to verify the integrity of the creation data with the signature verification data before granting the electronic certification certificate. The electronic certification service provider may grant one or more certificates to each person who submits an

application, after verifying their identity and, where necessary, verifying their specific characteristics. (Hidaya Bouazza)

Legal Solutions to Avoid the Problem of Proving Digital Businesses

There are several legal solutions to avoid the problems of proving digital business companies, including the following:

A- Establishing the National Authority for the Prevention and Combating of ICT-Related Crimes

The legislator has taken a number of preventive and punitive measures to combat ICT-related crimes. The legislator has established an administrative body tasked with preventing and investigating ICT-related crimes, particularly serious crimes that threaten state security in general or are described as terrorist crimes. In order to uncover the perpetrators of these crimes, the legislator has authorized this body, in cooperation with the judicial police, to establish electronic technical arrangements aimed at intercepting electronic messages or recording personal information.

(Recording personal information conflicts with the sanctity of private life and the confidentiality of private correspondence, especially since these are constitutionally guaranteed. This prompts us to ask how to reconcile the Authority's commitment to preventing crimes related to information and communication technology, particularly those that threaten state security and are described as terrorist and subversive acts, with the sanctity of private life and the confidentiality of correspondence, especially given that these are constitutionally guaranteed rights?

The National Authority for the Prevention and Combating of Crimes Related to Information and Communication Technology was established pursuant to Law No. 09-04 (09-04)The aforementioned law includes special rules for the prevention and combating of crimes related to information and communication technology. According to Article 14, this body is responsible for the following tasks:

-Activating and coordinating operations to prevent and combat crimes related to information and communication technology.

-Assisting judicial authorities and judicial police services in their investigations into crimes related to information and communication technology, including gathering information and conducting judicial expertise.

-Exchanging information with its foreign counterparts to gather all useful data to identify perpetrators of crimes related to information and communication technology and determine their whereabouts .Referring to French law, the company's articles of association allow the Board of Directors to use information technology, through modern technologies, as if they were present, provided that the company using this technology indicates in the minutes of the Board of Directors' meeting. Several legislations were issued during the period of the spread of Covid-19, including what allows the Board of Directors of a joint-stock company to hold a meeting remotely, considering that the quorum has been achieved in the meeting by means of teleconferencing or audio-visual, while respecting the provisions of the Companies Law, and another that facilitates the Board's meeting, even if it is for a specific period.(Karim)

As for the Algerian legislator, by referring to the provisions relating to management, especially the methods of holding general assembly meetings, there was no indication of the permissibility of using modern communication technologies. Thus, the legislator is far from the provisions of companies on information technology, despite its regulation of remote meeting technology and e-mail since the end of the nineties of the last century. Despite the transformations that the national and international economic field has witnessed and the trend towards modernization and digitization, this technology has not been used in the management of companies in Algerian commercial law . (Karim)

Finally, we note that this national body used to enjoy the status of an independent administrative authority, but this was withdrawn due to political circumstances and it was made an administrative body subject to the authority of the Ministry of Defense.

Activating the Principle of Freedom of Evidence

Evidence aims to seek the truth and establish stability in dealings, as it is the surest means upon which individuals rely to protect their rights. A right is worthless if there is no means to prove it when it is disputed. In addition to the individual interest that evidence achieves, it also achieves a general social interest, as it leads to the resolution of disputes, the prevention of malicious claims, and the provision of stability in society. This is confirmed by. (Bakdar)

– It should be noted that Article 333 of the Civil Code explicitly and unambiguously establishes the principle of freedom of proof in commercial matters, stating: "In non-commercial matters, if the value of a legal transaction exceeds 100,000 Algerian dinars or is of unspecified value, evidence of its existence or termination may not be presented by witnesses unless there is a text stipulating otherwise".

– Given all the issues discussed regarding e-commerce companies and the difficulty of writing them in official electronic form, similar to traditional commercial companies, proving them electronically is based on two possibilities. The first is relying on certification certificates through which the company was registered electronically and assigned a specific domain name indicating its existence. The second hypothesis is to apply the general provisions of freedom of commercial proof by proving them by all available legal means. Conclusion:

– We can ultimately conclude that digital commercial companies are not merely a legal or economic concept, but rather a legal reality whose boundaries have been defined and defined in comparative legislation to operate within a stable framework. Consequently, the issue of proving them electronically has become easier, given the availability of all electronic data. This is in contrast to Algerian law, which continues to struggle legislatively in its attempt to embody the provisions of digital commerce in all its aspects, particularly the issue of electronic proof in the field of digital commercial companies, given the lack of electronic formality. Consequently, these companies remain established in a customary manner and their proof is subject to general rules. We can observe the following results:

– -There are no distinct provisions in the field of electronic proof for e-commerce companies in Algerian law.

– -Despite the issuance of some laws dedicated to the electronic establishment of digital commercial companies, it is concluded that commercial companies are exempt due to the lack of electronic documentation. Consequently, the problem of proof arises for digital commercial companies that operate electronically and deal with consumers electronically.

– The validity of an electronic signature in Algeria has the same legal value as a conventional signature, but its implementation in practice remains modest in the transactions of digital commercial enterprises in Algeria.

– Based on the findings presented, the following proposals can be proposed:

– The law regulating the notary profession must be amended to enable notaries to draft the electronic contracts of incorporation of digital commercial enterprises. This will ensure the legal existence of commercial enterprises operating online, facilitating the process of proving and protecting them and their clients.

– An independent body must be established under the supervision of the Ministry of Commerce and the Ministry of Post and Telecommunications to maintain the electronic files of commercial enterprises in their various legal forms. This body will grant electronic authorizations to all parties involved, allowing for confirmation. This will enable the notary drafting the contract to verify the basic data of the company and its

partners in the case of an active electronic company, and to be granted a special code in the case of incorporation.

– Since the Algerian legislator has equated the legal value of regular writing with electronic writing, as well as electronic signatures, it is necessary to amend the provisions of Article 324 bis 1, which imposes formality in some private transactions, including digital commercial companies. We propose that the term "electronic formality" be included, followed by amending the provisions of companies in the Commercial Code.

– Repeal the prohibition stipulated in Article 3 of Law No. 05-18 regulating the provisions of e-commerce, which prohibits transactions that require formal contracts, and introduce the possibility of applying the provisions of e-commerce by introducing electronic formality.

Acknowledgement

The authors extend their sincere gratitude to the Faculty of Law and Political Science at University of El Oued and Tissemsilt University for their academic support and access to legal databases during the preparation of this study. Special thanks are also due to the legal experts and practitioners who contributed valuable insights into the evolving landscape of Algerian digital commerce regulation.

Ethical Considerations

This research was conducted in accordance with established academic ethics and integrity standards. All materials used are properly cited and referenced. No part of this work involves data collection from human or animal subjects. The study adheres to the ethical publishing guidelines of COPE (Committee on Publication Ethics) and complies with principles of transparency, objectivity, and scholarly rigor.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The study was conducted through the authors' own academic and institutional resources.

Conflict of Interest

The authors declare that there are no conflicts of interest related to the publication of this research. All authors contributed equally to the conception, analysis, and preparation of the manuscript and approved the final version for submission.

References (APA 7th Edition)

1. Al-Gharib, F. S. (2005). Electronic signature and its evidential validity. Arab Administrative Development Organization, Research and Studies, 215.

2. Al-Haija, M. I. (2004). E-commerce contracts (Electronic contracts – Applicable law – Contractual and non-contractual disputes). Dar Al-Thaqafa for Publishing and Distribution.

3. Al-Qudah, G. A. (2003). The authenticity of electronic signatures: A study of Jordanian legislation. Damascus University Journal of Economic and Legal Sciences, 20(1), 169.

4. Bakdar, K. (2012, June 14). Freedom of proof in commercial matters. Law Journal, 2(1), 66. University of Ghilizan.

5. Bouhamidi, N. (n.d.). The technical revolution and justifications for legal amendments: "Electronic signature as a model." Muhkamah Magazine, 4, 175.

6. Center for Research in Scientific and Technical Information (CERIST). (n.d.). Domain name registration in Algeria. Retrieved November 10, 2012, from http://www.cerist.dz

7. Habet, A. (2015). E-commerce in Algeria (Doctoral dissertation). Mouloud Mammeri University, Tizi Ouzou, Algeria.

8. Hidaya Bouazza. (2019). The legal system of electronic payments: A comparative study (Doctoral dissertation). Faculty of Law and Political Science, Abu Bakr Belkaid University, Tlemcen, Algeria.

9. Karim, K. (2021, January). Digitizing the preparation of corporate social responsibility filing in light of the COVID-19 crisis. Journal of Judicial Reasoning, 13(Special Issue), 154. Mohamed Khider University of Biskra.

10. Law No. 09-04 of August 5, 2009. Containing special rules for the prevention and combating of crimes related to information and communication technology. Official Gazette of Algeria, (47), August 16, 2009.

11. Law No. 18-05 of May 10, 2018. On electronic commerce and online transactions. Official Gazette of Algeria, (28), May 16, 2018.

12. Law No. 04-08 of August 14, 2004. Concerning the conditions for practicing commercial activities. Official Gazette of Algeria, (52), August 18, 2004.

13. Law No. 2000-03 of August 5, 2000. Regulating the general rules of postal and telecommunications. Official Gazette of Algeria, (48), August 6, 2000.

14. Mohamed Mounir El-Genbihi, M. M. (2008). Electronic transactions and their legal framework. Dar El-Fikr El-Gam'i.

15. Nasirat, A. M. (2005). The authenticity of electronic signatures: A comparative study (1st ed.). Dar Al-Thaqafa for Publishing and Distribution.

16. Nouiri, M. E. (2020, January). Special methods of commercial evidence: Between text and application in Algeria. Journal of Political Science and Law, 4(20), 196. Arab Democratic Center, Berlin.

17. Order No. 75-58 of September 26, 1975. Concerning the Algerian Civil and Commercial Code. Official Gazette of Algeria, (50), May 13, 2007.

18. Ouzian, M. (n.d.). The extent of the capability of the evidence provisions in the Dahir on obligations and contracts to include electronic signatures. Journal of the Judiciary and Law, 155, 20.

19. Rahma, T. (2021, January 15). Electronic signature and Algerian legal adaptation (Master's thesis). University of Sidi Bel Abbes, Algeria.

20. Samia, K. (2016, November 23). The role of electronic transactions in economic development. Mouloud Mammeri University, Tizi Ouzou, Algeria.

21. Zarouk, Y. (2016, June). The position of electronic writing in evidence: A comparative study. Al-Mi'yar Magazine, 13, 258–264. Ahmed Ben Yahya Al-Wansharisi University Center, Tissemsilt.

22. Aliyeva, S. (2023). Digital transformation and information security in public administration: Challenges and legal perspectives. Science, Education and Innovations in the Context of Modern Problems, 7(9), 215–229. https://doi.org/10.56334/sei/7.9.12

23. Bouhidel, N. (2022). The development of e-commerce legislation in Algeria: Comparative overview with EU directives. Science, Education and Innovations in the Context of Modern Problems, 6(7), 143–157. https://doi.org/10.56334/sei/6.7.18

24. Rahmani, L. (2024). The digital economy and cyber law reforms in Algeria: Towards sustainable governance. Science, Education and Innovations in the Context of Modern Problems, 8(11), 302–317. https://doi.org/10.56334/sei/8.11.24

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Criminal Protection of Tourists in Algeria: Legal Frameworks, Security Strategies, and Institutional Mechanisms for Sustainable Tourism Development

Dr.
Azzaz Mourad
Echahid Cheikh Larbi Tebessi University, Faculty of Law and Political Science
Tébessa, Algeria
E-mail: azzaz.mourad@univ-tebessa.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Tourist protection; Criminal law; Tourism police; Security legislation; Algeria; Sustainable tourism; Institutional cooperation; Legal framework; Tourism marketing; Public safety

Abstract

Tourism is a dynamic economic and cultural sector that plays a pivotal role in enhancing national revenue, fostering cross-cultural understanding, and generating employment opportunities. In Algeria, the growth of this sector has been periodically hindered by security challenges that undermine public confidence and limit foreign investment. This study provides an analytical examination of the criminal protection of tourists within the framework of Algerian law, emphasizing the legal, institutional, and operational mechanisms established to ensure the safety and rights of travelers.

The paper explores the historical emergence of tourism policing in Algeria—dating back to the late 1950s—and situates it within contemporary legislative developments and international norms on the protection of tourists. The discussion extends to the cooperation between the Ministry of Tourism, the Ministry of Interior, and national security institutions in enforcing a comprehensive strategy that includes surveillance systems, specialized training for tourism police units, and coordination with local authorities.

Furthermore, the study identifies how the deterioration of security in the Sahel region and the global rise of terrorism have impacted Algeria's tourism industry, particularly in the Sahara and southern regions. It critically assesses how legislative reforms, public communication strategies, and safety infrastructure have been utilized to restore trust and stimulate sustainable tourism.

Ultimately, the paper argues that effective criminal protection of tourists is not limited to penal sanctions but extends to preventive frameworks rooted in governance, transparency, and inter-sectoral coordination. The establishment of a secure and ethically grounded tourism environment is essential for positioning Algeria as a competitive Mediterranean destination, capable of balancing economic growth with national security imperatives.

Citation. Mourad A. (2025). The Criminal Protection of Tourists in Algeria: Legal Frameworks, Security Strategies, and Institutional Mechanisms for Sustainable Tourism Development. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1141–1151. https://doi.org/10.56334/sei/8.11.94

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 01.03.2025 | Accepted: 29.03.2025 | Publishing time: 07.10.2025

1. Introduction

In recent decades, the global tourism sector has become one of the most dynamic and economically significant industries, fostering intercultural exchange, employment generation, and sustainable development. However, this progress has increasingly been challenged by the rise of terrorism and transnational security threats that directly target or indirectly affect tourist destinations. The recent surge in terrorist attacks across the world has underscored the vulnerability of tourism infrastructures, reshaped travelers' behavioral patterns, and intensified international attention on the intersection between tourism, safety, and national security (World Tourism Organization [UNWTO], 2023).

In light of these developments, it is essential to deepen academic and policy-oriented reflections on how tourism-dependent states can transform security challenges into strategic opportunities for enhancing destination image, governance frameworks, and crisis management. As scholars such as Pizam and Mansfeld (2006) have emphasized, safety and security are no longer secondary elements of tourism policy but rather foundational pillars that determine the competitiveness and sustainability of the entire sector.

1.1. The Algerian Context: Challenges and Potential

Algeria occupies a unique position within the Mediterranean and African tourism landscape due to its extensive cultural heritage and vast geographical diversity. Among its most prominent natural assets, the Algerian Sahara stands as one of the largest and most captivating deserts on Earth—a region rich in archaeological, ecological, and cultural resources that possess immense tourism potential. However, persistent instability in the Sahel region and recurrent terrorist activities perpetrated by groups such as Al-Qaeda in the Islamic Maghreb have exerted significant pressure on the national tourism economy. These challenges have not only discouraged international visitors but also disrupted domestic tourism flows, undermining a sector that could otherwise serve as a vital driver of economic diversification and sustainable development.

Terrorism constitutes one of the most severe impediments to tourism development in Algeria. Beyond the immediate threats to human safety, it erodes international trust, generates negative media portrayals, and constrains foreign investment. Consequently, it has become imperative for Algerian policymakers to reinforce the institutional, legislative, and security frameworks governing tourism to restore confidence among both national and foreign stakeholders.

1.2. Institutional Response and the National Tourism Safety Plan

In response to these challenges, the Algerian Ministry of Tourism, in coordination with the Ministry of Interior and national security agencies, has implemented a targeted strategic plan designed to safeguard foreign tourists and revitalize the country's tourism potential. This initiative aligns with the **National Tourism Guidance Plan (Plan Directeur du Tourisme 2030)**, which envisions the modernization of tourism infrastructures, the professionalization of tourism services, and the enhancement of Algeria's image in international markets.

A key pillar of this strategy involves the establishment of the **Tourism Police**, a specialized security unit tasked with ensuring the safety of tourists, protecting archaeological and cultural sites, and maintaining order in high-traffic areas such as airports, ports, and border zones. The Tourism Police initiative, which traces its conceptual origins to the late 1950s, reflects the institutional recognition that tourism development and national security are deeply interlinked.

While several components of the national security plan remain classified for operational reasons, the government has emphasized transparency regarding its overarching objectives—namely, the prevention of criminal activity, the protection of human life, and the preservation of Algeria's cultural patrimony. The program also underscores the importance of inter-agency cooperation, public communication, and the training of specialized personnel capable of responding to emerging threats in real time.

1.3. The Nexus of Security, Image, and Marketing

The sustainability of the tourism industry in Algeria is contingent not only upon effective policing and legal protection but also upon strategic communication and destination marketing. The negative international media coverage surrounding regional instability has often distorted perceptions of Algeria as a high-risk destination. Therefore, the integration of security assurance into marketing and branding strategies is critical. As recent tourism marketing literature suggests (Cohen & Neal, 2019; Kotler et al., 2021), the ability of a destination to project reliability, safety, and hospitality is as influential as its natural or cultural appeal.

Consequently, Algerian tourism authorities have sought to reposition the country's image by highlighting the government's proactive measures to ensure visitor safety, improve infrastructure, and foster intercultural hospitality. In this regard, media cooperation plays a pivotal role in reshaping narratives, promoting transparency, and projecting a positive national image that aligns with global tourism standards.

1.4. The Central Problem

The core question guiding this study can thus be articulated as follows: **What legal, institutional, and security measures are currently being implemented to ensure the protection of tourists in Algeria, and to what extent have these measures contributed to restoring confidence and promoting sustainable tourism marketing?**

Addressing this question requires a multidimensional analysis that bridges criminal law, administrative governance, and tourism management. The forthcoming sections explore Algeria's strategies for ensuring tourism safety and security, examining the legislative frameworks, organizational structures, and marketing mechanisms that underpin the state's approach to protecting its tourism sector from contemporary threats.

2. Measures to Protect Tourists in Algeria

Ensuring the safety and well-being of tourists has become a central concern of public policy in Algeria's contemporary tourism development strategy. The country's approach integrates preventive, legal, and operational frameworks designed to address emerging threats to tourism, ranging from organized crime to terrorism and infrastructural risks. In line with international best practices promoted by the **World Tourism Organization (UNWTO)**, the Algerian government has prioritized institutional reform and capacity building as part of its broader commitment to sustainable tourism development (Sarah J. Ryu.).

2.1. Primary Measures to Protect Tourists

The initial phase of Algeria's national tourism security policy has focused on identifying and overcoming conceptual and managerial pitfalls that have historically undermined the efficiency of tourism protection programs. Among the key challenges to avoid are:

- Addressing security risks in isolation from broader social, political, and economic factors.
- Relying on outdated or reactive security plans without integrating modern preventive approaches.
- Allowing inadequate resource allocation or administrative negligence to result in disproportionate responses.
- Neglecting the critical role of public communication, security awareness, and tourism-oriented media engagement.
- Treating tourism security merely as a bureaucratic obligation rather than as a strategic component of national development.

In response to these challenges, the **General Directorate of Public Security (Direction Générale de la Sûreté Nationale)** issued a directive announcing the establishment of a specialized security task force dedicated exclusively to tourism-related protection. This initiative represents a structural innovation within Algeria's public security system. The newly formed unit is tasked with guaranteeing optimal visitor experiences by coordinating security logistics at airports, ports, and land border crossings; liaising with local authorities to secure tourist routes; responding to visitor concerns; and ensuring the protection of hospitality establishments and tourist sites.

In a statement delivered during a recent national police training session, the Directorate announced the creation of a **"Tourism Security Coordinator"** position within each provincial security directorate. These coordinators, supported by specialized police units, are responsible for devising operational strategies to safeguard both foreign and domestic tourists, establishing rapid-response procedures in the event of security threats, and implementing localized safety measures.

The institutionalization of this structure is overseen by a **central command unit** at the national level, which ensures coherence in the application of security protocols across all provinces. Importantly, the role of the Tourism Security Coordinator extends beyond conventional policing; it also includes preventive diplomacy, inter-agency coordination, and ethical engagement with tourists and local communities.

To professionalize this effort, the first cohort of officers has undergone training at the **National Institute of Criminal Police in Algiers**, where they receive comprehensive instruction in tourism legislation, crisis management, visitor relations, and the ethics of tourism security. The curriculum also emphasizes the protection of archaeological heritage, reflecting Algeria's dual commitment to cultural preservation and sustainable tourism governance.

2.2. Practical Measures to Protect Tourists

The effective implementation of tourism safety measures requires a well-defined strategic framework that balances objectives with available institutional and logistical resources. Algeria's approach to operationalizing this framework involves several key priorities:

- Developing a coherent and adaptable national tourism safety plan.
- Aligning security objectives with economic and human resource capacities.
- Protecting the country's tangible and intangible tourism assets.
- Establishing clear accountability mechanisms for tourism security oversight.
- Considering cross-border dynamics and regional security interactions that influence domestic tourism stability.

A cornerstone of these initiatives is the **Tourism Police (Police Touristique)**—a specialized branch of the national police force created to ensure the security of visitors, protect archaeological and natural heritage, and strengthen inter-sectoral collaboration. Although Algeria currently enjoys relative internal stability, the formation of the Tourism Police serves both a preventive and confidence-building purpose. Its mandate includes maintaining safety across diverse tourism environments, from urban centers and coastal areas to desert and mountain regions.

The government's decision to train an initial group of sixty officers marks a significant milestone in institutionalizing tourism security. This initiative not only addresses the growing complexity of managing tourist inflows but also alleviates the workload of existing security personnel, particularly during high-season periods. Moreover, it symbolizes a shift toward **integrated tourism management**, in which safety, hospitality, and economic development are treated as interconnected policy goals (Rayan Darouich. 1996).

Tourism currently contributes approximately 2% to Algeria's gross domestic product, and the establishment of the Tourism Police is expected to enhance the performance of the sector by promoting diversified forms of tourism—including cultural, wellness, desert, and coastal tourism. According to **Issa Naili**, former Director of Public Security at the General Directorate of National Security, the primary objective of this initiative is to develop a resilient tourism sector capable of supporting economic diversification while simultaneously safeguarding Algeria's historical and cultural heritage from risks of looting and vandalism.

The initiative also incorporates continuous on-ground security operations across key cities, tourist centers, and archaeological areas. These operations include identity verification, vehicle monitoring, and the implementation of controlled-access systems in zones of high touristic concentration. In addition, enhanced surveillance mechanisms ensure 24-hour protection for sites frequently visited by both domestic and foreign tourists. Such measures aim to

create a **secure and welcoming environment**, reinforcing Algeria's reputation as a safe destination in an otherwise volatile regional context.

2.3. Legal Bodies and Institutional Framework for Tourist Protection

The establishment of **specialized legal and institutional bodies** represents the third strategic axis of Algeria's tourism security system. The formation of Tourist Police units forms part of a broader national framework aimed at improving the quality, efficiency, and transparency of public security services. The overarching mission of these units is to safeguard tourists' physical integrity, personal belongings, and overall experience throughout their stay in Algeria.

Following a successful pilot phase in major coastal provinces—where tourism activity intensifies during the summer—the **General Directorate of National Security** has initiated the gradual deployment of Tourism Police units across interior regions. Each provincial unit is composed of police officers trained according to local needs and demographic characteristics. Their work is supervised by senior officers who have undergone specialized training in security management, tourism law, and inter-institutional coordination.

The responsibilities of the Tourism Police are multifaceted, extending well beyond traditional policing duties. They encompass preventive, protective, and service-oriented functions, including:

- Facilitating the transit of foreign visitors through national border points and transportation hubs.
- Providing accurate information, guidance, and logistical assistance to travelers.
- Enhancing Algeria's national image by promoting a climate of safety, professionalism, and hospitality.
- Safeguarding cultural and historical heritage from theft, looting, and vandalism.
- Escorting tourist delegations and ensuring their safety throughout excursions and transfers.
- Managing tourist complaints and resolving conflicts at accommodation facilities, archaeological sites, and public spaces.
- Supporting official delegations and cultural missions during visits to heritage sites.

The deployment of these units is particularly critical in light of the security threats emanating from Algeria's neighboring regions. The rise of transnational terrorist organizations—most notably the **Salafist Group for Preaching and Combat (GSPC)**—in Mali and Mauritania poses significant risks to regional stability. These groups have engaged in kidnapping operations targeting foreign nationals, often to demand ransom or secure the release of detained members. By reinforcing surveillance and cooperation through the Tourism Police, Algeria aims to prevent such incidents within its borders and reassure international partners of its capacity to provide a safe environment for visitors (Marouan El-Soukkar. 1999).

Ultimately, the creation and institutionalization of these specialized bodies reflect Algeria's commitment to positioning tourism security not merely as a reactive mechanism, but as a **proactive, developmental, and rights-based framework**. This orientation situates tourism safety at the intersection of criminal protection, public governance, and cultural diplomacy—key elements for building a resilient and internationally competitive tourism sector.

3. The Role of Political Stability and Media in Establishing Tourism Safety and Security

The relationship between political stability, media discourse, and the perception of safety constitutes a cornerstone of modern tourism development. Empirical research and global experience consistently demonstrate that tourism cannot thrive without a secure and politically stable environment (Hall & O'Sullivan, 1996; Pizam, 1999). Conversely, when a country maintains stability, transparency, and effective governance, tourism flows tend to increase, bringing about higher levels of investment, employment, and cultural exchange. Thus, security and tourism are mutually reinforcing phenomena: the absence of one invariably weakens the other.

A secure political and social climate encourages the expansion of tourism infrastructure, enhances investor confidence, and contributes to the construction of a positive national image. It also facilitates the implementation of consistent tourism policies, which are essential for long-term sectoral growth. In contrast, political unrest, social turbulence, and security crises create uncertainty that discourages both domestic and foreign visitors, undermining the viability of tourism-based economies.

3.1. The Role of Political Stability

Political stability represents one of the fundamental prerequisites for sustainable tourism development. Contrary to the traditional separation between political and economic domains, contemporary scholarship recognizes that politics, economics, and tourism are intrinsically intertwined (Richter, 1983; Hall, 1994). Tourism, while primarily an economic activity, is deeply embedded in social, cultural, and political structures, and its evolution is often shaped by the state's political agenda and international relations.

In this context, the political environment functions as the enabling framework for tourism. Peaceful governance, the rule of law, and institutional continuity create the confidence necessary for both tourists and investors to engage with a destination. Political instability—manifested through armed conflicts, coups d'état, civil unrest, or abrupt policy shifts—has a direct and immediate impact on the tourism economy. Declines in arrivals, cancellations of flights, and warnings from foreign ministries often follow periods of unrest, as witnessed in countries such as Egypt and Tunisia during the early 2010s.

Tourism is also a vital source of foreign currency and a mechanism for international visibility. According to Bouarié (2010), tourism represents the second-largest global export after oil, accounting for more than USD 300 billion annually and nearly one-fourth of total global gross national product. Over the past two decades, global tourism has grown at an average annual rate of 7.1% in visitor numbers and 12.5% in revenues (UNWTO, 2023). Yet, these growth rates are not uniformly distributed; countries facing political or security instability often experience stagnation or regression in their tourism sectors, despite possessing significant natural and cultural resources.

Political stability also exerts a symbolic influence on a destination's international image. The perception of peace, safety, and effective governance reinforces positive travel decisions, while political conflicts, protests, and social upheavals generate a sense of risk that deters potential visitors. As scholars have noted, tourism does not exist independently of politics—it often serves as both a reflection and an instrument of political processes (Burns, 1999; Hall, 2010). Governments can use tourism diplomacy to strengthen international relations, improve national branding, and facilitate cultural dialogue. Consequently, the political dimension of tourism transcends economic boundaries, situating the sector at the intersection of diplomacy, development, and global governance.

For Algeria, maintaining political stability has been a decisive factor in rebuilding its tourism potential following the civil unrest of the 1990s. The state's efforts to consolidate security, reform public institutions, and strengthen the rule of law have significantly contributed to restoring international confidence. Stable governance allows for the systematic implementation of tourism infrastructure projects, supports foreign investment, and enables collaboration with international organizations in heritage conservation and tourism management.

3.2. The Role of Media

The media—both domestic and international—plays a pivotal role in shaping perceptions of security and influencing tourism flows. In the contemporary information age, the concept of *security media* has emerged as a strategic instrument of preventive communication, designed to raise awareness, disseminate accurate information, and foster cooperation between the public and security institutions (Ibrahim, 2018). Security is no longer confined to post-crisis intervention; it increasingly relies on preemptive communication and community participation to deter risks before they materialize.

Security-oriented media serves several essential functions. It enhances public understanding of safety measures, builds trust in law enforcement agencies, and mobilizes societal cooperation in the pursuit of stability. Through

news coverage, documentaries, and dramatizations, media outlets can reinforce responsible civic behavior and highlight the successes of national security initiatives. In turn, this fosters collective vigilance and a shared sense of responsibility among citizens—an indispensable foundation for national stability (Ibrahim Imam. 1975).

Equally significant is the role of *tourism media*, a specialized branch of communication that promotes a nation's attractions, services, and hospitality culture. Tourism media acts as both an educational and promotional tool, guiding domestic and international audiences toward discovering the country's cultural heritage and natural landscapes. Through visual storytelling, advertising campaigns, and digital marketing, it contributes to shaping the destination's identity and appeal (Morgan, Pritchard, & Pride, 2011).

In Algeria, the media's contribution to tourism promotion remains underdeveloped compared to global standards. Although the country has made progress in establishing tourism-oriented communication platforms, foreign media narratives continue to dominate the portrayal of Algeria abroad, often emphasizing regional instability or geopolitical risks. Such coverage distorts the reality of Algeria's safety improvements and natural beauty, creating a gap between perception and reality. This asymmetry underscores the urgent need for **strategic media diplomacy**—a coordinated communication policy involving the Ministry of Tourism, the Ministry of Communication, and private media organizations—to project a balanced and positive image internationally.

Former president of the **National Federation of Local Tourism Offices**, *Mohamed Azzouz*, emphasized that the revitalization of Algeria's tourism image could be achieved within a six-year horizon if stakeholders adopt a unified vision and proactive communication strategy. He argued that tourism promotion should not rest solely on the shoulders of the National Tourism Office or the Ministry of Tourism but must engage regional administrations, private operators, and local communities in a collective national effort.

Similarly, *Mohamed Maazouz* highlighted Algeria's current transition toward recovery and renewal after a decade of stagnation in the tourism sector. The rediscovery of numerous archaeological and natural sites—such as the *Knif Traditional Bath* in Khenchela, recently identified as Africa's first natural thermal bath—illustrates the country's untapped potential. With strategic media coverage and international partnerships, such discoveries could serve as powerful catalysts for repositioning Algeria as a distinctive and secure Mediterranean tourism destination.

In this sense, media and political stability represent **two interdependent pillars** of tourism safety and development. Political stability ensures the structural conditions necessary for tourism to operate, while the media shapes public perception, disseminates trust, and amplifies the state's achievements. Together, they form the communicative and institutional architecture required to promote Algeria as a safe, welcoming, and globally competitive tourism destination.

4. Conclusion

Tourism legislation, particularly the laws and regulations that focus on the protection of tourists, represents a vital pillar in shaping the contemporary framework of sustainable tourism governance in Algeria. These regulations have established transparent mechanisms and accessible procedures designed to encourage both domestic and foreign investment in the tourism sector. They have also facilitated a climate conducive to diversification and economic revitalization, especially in light of the security challenges faced nationally and regionally over the past two decades.

The significance of tourism law lies in its dual function: **protective and regulatory**. On one hand, it safeguards the rights and interests of all stakeholders within the tourism ecosystem—travelers, operators, and institutions alike—by setting out legal norms and responsibilities. On the other hand, it establishes deterrent mechanisms and sanctions to address violations and criminal acts targeting tourists or tourism infrastructure. The existence of such a framework aligns Algeria with the objectives of international organizations such as the **World Tourism Organization (UNWTO)** and the **Arab Tourism Organization**, both of which emphasize the importance of legal uniformity, accountability, and ethical conduct in tourism management.

However, the effectiveness of this legal framework depends largely on its **implementation**—a process that requires continuous coordination between national and local authorities, as well as between the public and private sectors.

Local governance bodies must assume their roles not merely as service providers but as proactive agents of safety, regulation, and promotion. This collective and participatory approach reinforces the shared responsibility of sustaining tourism development as a national priority (El-Hachach, A. 2010).

To achieve tangible results, Algeria must adopt **bold institutional and legislative reforms** that modernize tourism administration and address persistent procedural inefficiencies. Such reforms include the simplification of investment processes, the enhancement of tourism security guarantees, and the mitigation of the negative impacts of recurring travel advisories issued by foreign governments. Furthermore, sustained **political stability** and **constructive media engagement** remain indispensable prerequisites for ensuring security stability and promoting Algeria's image as a safe and welcoming destination.

The establishment of a specialized **Tourism Police**—an initiative rooted in Algeria's historical awareness of its archaeological and cultural wealth—reflects an institutional recognition that tourism safety is not a peripheral issue, but a core component of national security and economic development. The presence of trained officers across the Republic's major archaeological, historical, and natural sites demonstrates the country's commitment to protecting both visitors and its heritage assets. These personnel serve multiple functions: accompanying tourist groups, managing entry and exit procedures, providing assistance and guidance, responding to complaints, conducting inspections, and ensuring compliance with safety and administrative regulations.

Ultimately, the criminal protection of tourists in Algeria reflects a multidimensional effort that integrates **security, law, ethics, and institutional collaboration**. It is a dynamic process that continues to evolve in response to global and domestic challenges, guided by the principle that a secure tourism environment is a prerequisite for economic prosperity, cultural exchange, and the promotion of Algeria's image on the world stage.

5. Results

The findings of this study underscore several critical observations concerning the criminal and administrative protection of tourists in Algeria:

- The **criminal protection of tourists** constitutes a formal responsibility within the broader mandate of the national security apparatus.
- The **presence of visible tourism police units**, while necessary, may inadvertently project an image of insecurity to foreign visitors, highlighting the need for discreet or indirect protection measures.
- There exists a **resource gap** that limits the state's capacity to monitor all tourism activities effectively, particularly in remote regions.
- Given Algeria's vast geographical territory, it remains **impractical to provide comprehensive protection** for all sites simultaneously without enhanced coordination and digital support systems.
- The operational costs associated with maintaining the tourism police may, in certain cases, **exceed the direct revenue** generated by tourism in the protected zones, suggesting the need for strategic optimization.
- The **criminal and legal protection of tourists** intersects closely with the general jurisdiction of the judiciary and law enforcement, requiring better-defined procedural linkages.
- The **integration of tourism protection provisions into Arab national legislations** reflects a regional consensus on the need to safeguard visitors amid prevailing geopolitical instabilities.

These findings collectively affirm that the safety and protection of tourists in Algeria is not solely a matter of law enforcement but rather a systemic challenge requiring balanced policies, technological innovation, and public participation.

6. Recommendations

To reinforce Algeria's framework for criminal and institutional protection of tourists, the following recommendations are proposed:

1. **Develop and institutionalize specialized training and educational programs** for tourism police personnel, integrating modules on intercultural communication, hospitality ethics, and crisis management.
2. **Increase the severity of legal penalties** against individuals or groups that target tourists or commit offenses within tourism facilities.
3. **Establish an ethical and professional code of conduct** governing the behavior of tourism police officers, service providers, and public officials interacting with both domestic and international visitors.
4. **Amend the Penal Code** and related legislation to include explicit provisions addressing crimes against tourists and violations occurring within tourism spaces.
5. **Implement indirect and preventive security measures** (such as surveillance systems and community engagement programs) to minimize the visible militarization of tourist areas.
6. **Integrate cultural and linguistic training** into the preparation of tourism police personnel, ensuring that officers possess both security expertise and comprehensive knowledge of local and international tourism contexts.
7. **Promote a culture of legal awareness among tourists and citizens**, emphasizing respect for regulations, heritage protection, and responsible tourism practices.
8. **Enhance collaboration between the media and tourism authorities** to raise public awareness about tourism safety, promote positive narratives, and counter misinformation.
9. **Encourage cooperation between public and private tourism operators**, requiring both to share responsibility for visitor safety and reduce dependence on state security forces.
10. **Strengthen coordination and strategic planning** among all relevant stakeholders—ministries, local governments, tourism offices, private operators, and civil society—to ensure the alignment of tourism, security, and development policies.

Final Remark

The sustainable development of tourism in Algeria depends not only on its natural and cultural endowments but also on its ability to guarantee **security, justice, and trust**. By integrating criminal protection, political stability, and media diplomacy into a cohesive national strategy, Algeria can transform its tourism sector into a resilient, ethically governed, and globally competitive industry—one that upholds both economic prosperity and human security as complementary objectives.

Acknowledgment

The author expresses sincere appreciation to the **Echahid Cheikh Larbi Tebessi University, Tébessa, Algeria**, for its continuous academic and institutional support in promoting research on tourism security and legal protection. Gratitude is also extended to the **General Directorate of National Security (DGSN)** and the **Ministry of Tourism and Handicrafts of Algeria** for providing access to relevant documents, legal materials, and practical insights into the implementation of the Tourism Police initiative. The author further thanks the reviewers and editorial team of *Science, Education and Innovations in the Context of Modern Problems* for their valuable guidance and constructive comments that helped improve the quality and scholarly rigor of this paper.

Ethical Considerations

This research was conducted in full compliance with academic integrity and ethical research principles. All sources of data and information have been properly cited in accordance with the **American Psychological Association (APA) 7th Edition** referencing style. The study did not involve human participants, personal data collection, or experimental interventions; therefore, no ethical approval was required under the institutional research guidelines of Echahid Cheikh Larbi Tebessi University. The author affirms adherence to the ethical publishing standards of the **Committee on Publication Ethics (COPE)**, ensuring transparency, originality, and academic honesty throughout the research and publication process.

Funding

This research received **no specific grant** from any public, commercial, or not-for-profit funding agency. The study was carried out as part of the author's independent academic work and institutional research responsibilities at **Echahid Cheikh Larbi Tebessi University, Tébessa, Algeria**.

Conflict of Interest

The author declares **no conflict of interest** related to the research, authorship, or publication of this article. The views and conclusions expressed herein are solely those of the author and do not necessarily reflect the official positions of any affiliated institution or governmental body.

References:

1. Abdelaziz Ben Mohammed El-Hazza. (2013). *The contribution of the tourism sector to the development of human resources*. The General Authority for Tourism and Antiquities, Kingdom of Saudi Arabia.
2. Abdelsaheb El-Chakri. (n.d.). *Tourism security*. *Islamic Tourism Journal*, (23), 9. Retrieved from [Journal website].
    A. Sh. A. (2013, August 21). Political stability is necessary for the success of the economic equation of tourism and investment in Egypt. *El-Youm El-Sabea Newspaper*.
3. Ahmed Ben Souleiman Salah El-Rabish. (2007). *Tourist crimes*. Naif Arab University for Security Sciences.
4. Ahmed Mahmoud. (2007). *Interview with the tourism industry*. Dar Kunooz El-Ma'rifa.
5. Ahmed Moustafa. (1997). *Specialized media*. Qaryounis University.
6. Ahmed Tessa. (1993). *Tourism economy and territorial management*. Office of University Publications.
7. Ali Ben Fayez El-Jahni, et al. (2004). *Tourism security*. Center for Studies and Research, Naif Arab University for Security Sciences.
8. Aouinen Abdelkader. (2012). The reality of Algerian tourism. *Journal of New Economics*, (7), 225.
9. Balbakhari Sami, & Ben Ahsan Nasser Aladin. (2012, November 19–20). *The impact of tourism media on the image of domestic tourism*. National Forum on the Opportunities and Risks of Domestic Tourism in Algeria, Batna, 20 ff.
10. Bouarié. (2010). *[Tourism as a global export commodity]*. [in Arabic].
11. Decree No. 81-135 of Sha'ban 24, 1401 (August 27, 1981). Amending Order No. 67-281 concerning excavations and the protection of historical and natural sites and monuments.
12. Djassim, S. (2008, October 10). *Tourism media: An urgent necessity and a wealth awaiting investment*. *Al-Nabaa Information Network*. https://www.annabaa.org/nbanews/71/396.htm
13. Edgell, D. L. (Year n.d.). *Op. cit.* [in referenced work].
14. El-Chaab Newspaper. (2013, June 24). Secretary of State for Tourism Mohamed Amine Hadj Said: "Tourism is not about building luxury vehicles and hotels, but rather about creating tourist and recreational activities."
15. El-Chorouk Newspaper. (2013, May 27). *"Tourist Police" to secure tourists and protect archaeological property.*
16. El-Hachach, A. (2010). Media and security. *Kuwaiti Ministry of Interior Magazine*, (543), 6 ff. Retrieved from Ministry website.
17. El-Khabar Newspaper. (2013, May 27). Khaled Boudia, *Tiguentourine attack affects tourism in Algeria: "Security commandos" to protect foreign tourists.*
18. El-Maw'id Daily Newspaper. (2013, September 17). *Issue 17.*
19. El-Nahar El-Jadid Newspaper. (2010, February 15). Khaled T. *National Security begins installing "Tourist Police" teams at the provincial level in parallel with the growing phenomenon of kidnapping foreign nationals in some neighboring countries.*
20. Executive Decree No. 04-112 of April 13, 2004. Defining the duties of the provincial committee responsible for proposing the opening and prohibition of beaches for swimming, organizing them, and procedures for their operation.
21. Fouzia Bersoli. (2012, November 19–20). *The role of tourism security in sustainable tourism.* National Forum on the Opportunities and Risks of Domestic Tourism in Algeria, Batna, 8.

22. Ibrahim Imam. (1975). *Media and communication with the masses* (2nd ed.). Anglo-Egyptian Library.
23. Ivo Kunst. (2011). The role of government tourism investment in Mediterranean countries. *Tourism and Hospitality Management*, 17 (1), 115–130.
24. John Miller, et al. (1988). *Media: A means and a message* (S. El-Harthi, Trans.). Dar El-Merrikh.
25. Khaled Kaouach. (2012). Components and indicators of tourism in Algeria. *Journal of North African Economics*, 1, 13 ff. University of Biskra.
26. Law No. 03-03. *Relating to tourist areas and sites.* [Reconsidered version].
27. Law No. 03-02 of February 17, 2003. Defining the general rules for the tourist use and exploitation of beaches.
28. Marouan El-Soukkar. (1999). *Selections from the tourism economy.* Majdalawi Publishing and Distribution.
29. Marouan El-Soukkar. (1999). *Op. cit.*, p. 108.
30. Mohamed Amine Hadj Said (Secretary of State for Tourism). (2013, June 24). *Tourism is not about building luxury vehicles and hotels, but about creating tourist and recreational activities. El-Chaab Newspaper.*
31. Moustafa El-Nadjjar. (2011, November). Politics sometimes before tourism. *El-Ahram Daily Newspaper*, (17).
32. Oussama Sabaa. (2013, September 15). *The Blue Plan of the General Directorate of National Security*, implemented in summer 2004 as a preliminary experiment. *Al-Mahwar Al-Youmi Newspaper.*
33. Reid, S. (2011). *Legal basis for state and territory tourism planning.* National Library of Australia Cataloguing-in-Publication Entry, 12–16.
34. Rayan Darouich. (1996). *Tourism investments in Jordan and future prospects* (Master's thesis). University of Algiers.
35. Sana El-Hadj. (2013). *The role of the media in economic and social security issues.* Publications of the Lebanese Ministry of Information.
36. Sarah J. Ryu. (n.d.). *Political instability and its effects on tourism.* Victoria University Melbourne, Australia.
37. The Quality Plan included in the National Tourism Development Plan for the 2025 Prospects. (2012, March 14). *Official Gazette No. 15.*
38. UNWTO & Middle East University. (2012, September 6–8). *Document issued by the International Conference on the Development of Tourism and Hotels in the Arab World.* Amman, Jordan.

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

Teaching English in Algerian Middle Schools: Reconciling Teachers' Perceptions with the Realities of Practice under Contemporary Educational Policies

Abdelhadi Rachid
Dr.
Education and Development Laboratory,
University of Oran 2 Mohamed Ben Ahmed
Tébessa, Algeria
E-mail: abdelhadi.rachid@univ-oran2.dz

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords English language teaching; Algerian education; educational policy; teacher perceptions; professional development; modern pedagogical reforms.

Abstract

The present study investigates the practical realities of teaching English in Algerian middle schools in the context of recent educational reforms and evolving policy orientations. The research sample comprised 42 English-language teachers (male and female) selected through a probabilistic random sampling technique from several municipalities within the Wilaya of Relizane. Data were collected using a structured questionnaire designed to examine teachers' perceptions of English-language instruction in relation to the goals and expectations of modern educational policy. After establishing the instrument's validity and reliability, quantitative statistical analyses were performed. The findings revealed that teachers' overall perceptions of the current state of English teaching were moderate, indicating a gap between pedagogical aspirations and classroom realities. Furthermore, the analysis identified statistically significant gender differences in teachers' responses, favoring female participants. Differences were also found based on teaching experience, with more favorable perceptions among teachers possessing less than ten years of service. These results highlight persistent challenges in the implementation of language-education reforms and underscore the need for a comprehensive, flexible policy framework that prioritizes continuous professional development, context-sensitive pedagogy, and the integration of technological and instructional resources. Strengthening alignment between policy intent and classroom practice is essential for enhancing English-language education and supporting teachers in meeting contemporary educational demands.

Citation. Rachid A. (2025). Teaching English in Algerian Middle Schools: Reconciling Teachers' Perceptions with the Realities of Practice under Contemporary Educational Policies. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1152–1165. https://doi.org/10.56334/sei/8.11.95

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 19.04.2025 | Accepted: 12.08.2025 | Publishing time: 07.10.2025

1- Introduction:

Education is considered one of the most important basic components and indicators against which the progress and development of countries and societies is measured, as the development of the latter is based primarily on

the outcomes of the educational process, whether from people and competencies capable of advancing our societies, or through the material products of science represented by devices and technologies that play an effective role in developing activities and services and thus contributing to the progress of countries (Shehab, 2021, p. 87). To achieve these outcomes with quality and effectiveness, it is necessary to focus on a fundamental component of the educational process: "teaching methods." The latter are a fundamental link between the student and the curriculum components and represent the tool through which educational situations within the classroom are achieved, ensuring genuine interaction between the teacher, student, and content. From this standpoint, the effectiveness and quality of education is inseparable from the effectiveness of teaching methods, which contribute to achieving lesson objectives, organizing content, and stimulating learners' motivation, which enhances opportunities for active learning and takes the student out of the circle of passive reception and into the circle of interaction and participation" (Al-Khatib, 1997, p. 17–18).

In this field, the quality of education is only developed through a teacher with the required professional competence. Interest in the teaching profession from any society stems from the fingerprints that the teacher leaves on his students' behaviors, morals, minds, and personalities. We are undergoing tremendous scientific, technical, and research progress, so we have a strong need for more skills and ways of thinking that the teacher must acquire (Faraj, 2005, p. 7).

Learning foreign languages, especially English, is one of these essential skills, given that it is the language of science, technology, and global communication. This requires teachers to be able not only to teach the language, but also to employ it as a tool for thinking, openness, and interaction with global developments. This makes teacher training in this field a strategic necessity to raise the level of education and keep pace with the challenges of the times.

So, "English is considered the basis of progress and development. It is the most common language, so it must be learned and taught to facilitate communication between different societies and cultures in an era in which the world has become a small village and English has become the dominant language. Knowing it has become a requirement for success in academic or practical life. Accordingly, learning English has become necessary." Due to its dominance in all fields, the number of people wishing to learn it is increasing, and there is no country in the world that does not teach it in its schools and universities and use it with others together. This indicates that the English language has become the undisputed language of the world (Tarhiwa, 2021, p. 174). Despite the growing importance of learning English as the language of science, technology, and international communication, the reality of teaching it still faces several challenges. Numerous previous studies have indicated a low level of student proficiency in this language, both in terms of linguistic proficiency and communicative skills. This has been confirmed by several previous studies that have addressed this topic from various perspectives. Geagea and Bashar's study (2024) indicated that students of English as a Foreign Language, despite having positive attitudes towards intercultural communication, suffer from a lack of self-confidence and a low level of intercultural awareness, which negatively affects their communicative competence. From On the other hand, Fakih's study (2009) revealed the existence of multiple difficulties in learning basic English language skills, represented by students' weakness in spelling and grammar skills, lack of supportive activities, and the absence of modern educational methods, in addition to weak diversity in assessment methods, and the existence of problems related to curricula, teaching methods, and educational administration. In the same context, the study of Al-Obeiki and Al-Saloum (2020) found that the speaking skills of secondary school students were at an average level, reflecting a gap in the acquisition of basic oral skills.

Students are not the only ones who suffer from difficulties in learning the English language, but the matter goes beyond that to include the view of many secondary education teachers themselves towards the curriculum of this subject. Multiple educational studies have shown that some teachers believe that the adopted English language curriculum does not keep pace with the real needs of learners, and does not reflect their aspirations towards learning a living and effective language used in real life, including the study of Al-Muhaimi and Al-Rashidi (2020), which showed that English language teachers face great procedural difficulties in applying continuous oral assessment of listening comprehension skills, related to the student first, then to the educational means, then to the teacher, and finally to the listening content With the absence of clear evaluation mechanisms and a diversity of methods.Fakih's study (2009) also showed that the level of teachers' application of procedures for teaching speaking skills according to the communicative approach in the intermediate stage remains modest, which reflects the weakness of oral and communicative interaction within the departments.

In his local study, Boutaghan (2024) highlighted that teaching English in Algerian schools suffers from structural challenges, the most important of which are the multiplicity of the local linguistic environment, the pressure of academic programs, the absence of modern educational methods, and overcrowding within departments, which hinders the implementation of effective teaching strategies, especially in the primary stage. For its part, the Kahol study (2012) also found that traditional teaching methods are one of the most prominent reasons for poor academic achievement in the English language among middle school students.

In terms of teachers' attitudes and professional training, Qasimi's study (2023) showed that primary school teachers' attitudes towards including the English language are generally positive, which is also confirmed by Harqas' study (2024), which monitored positive attitudes towards training objectives, but negative attitudes towards its content and duration, indicating the need to update training programs. In contrast, the Al-Jaboul study (2014) monitored an average level of awareness among English teachers of their need for professional development, which weakens the effectiveness of their performance in departments.

At the level of specialized language skills, the study of Al-Hoshani and Al-Nusyan (2020) revealed that teachers' beliefs and personal experiences influence methods of teaching writing skills, while the study of Al-Shahri (2021) showed that middle school teachers have positive attitudes towards using the flipped classroom as a modern curriculum in teaching English. Odeh's (2000) study also showed that teachers' attitudes towards teaching English literature are generally positive, but application is influenced by the curricula and strategies adopted.

Finally, Qadi's (2008) study highlighted the average use of modern teaching methods and technologies in teaching English at the intermediate level, noting that there are obstacles that limit their effective integration into daily education.

Based on the researcher's review of educational literature and previous studies related to this topic, it was concluded that there are several factors that affect students' learning of the English language, which overlap with each other and contribute to a low level of linguistic achievement. These factors include poor language proficiency due to a lack of actual practice within the department and the absence of a supportive environment outside the school. Teachers also rely on traditional teaching methods that focus on memorization and translation and neglect the development of communication skills. Limited pedagogical training among teachers and their poor adherence to modern methods of language teaching are also major obstacles. Deficiencies are also recorded in the content of the curriculum, which focuses on grammatical aspects more than practical skills, as well as the lack of modern educational methods and the absence of interactive media. Overcrowding within departments also represents an additional obstacle that limits opportunities for individual practice. On the other hand, students' low motivation and low self-confidence when speaking are observed as a result of the lack of family and community support. The dominance of the mother tongue or local dialects exacerbates the difficulty of using English in daily life, isolating it from lived reality. The combination of these factors explains the recorded weakness in learners' learning of this vital language.

Hence, this research aims to shed light on the reality of teaching English in Algerian schools: between educational policy and contemporary requirements, through a field study from the perspective of middle school teachers. Based on this context, the following questions arise:

1- What is the reality of teaching English in Algerian middle school schools under the current educational policy, and to what extent does this reality respond to the requirements of the times, from the point of view of middle school teachers?

2- Are there differences in the view of male and female professors towards teaching English in educational institutions in the intermediate education stage?

3- Are there any differences in the professors' view of teaching English in educational institutions in the intermediate education stage, according to teaching experience (between those under 10 years old and those 10 years old and above).

✓ **Research hypotheses**: The answers to the questions were as follows:

- The first hypothesis: There is an average level of reality in teaching English in Algerian middle school schools under the current educational policy from the point of view of middle school teachers.

- The second hypothesis: There are differences in the view of male and female professors towards teaching English in educational institutions in the intermediate education stage, and in favor of females.

- The third hypothesis: There are differences in the teachers' view of teaching English in educational institutions in the intermediate education stage, according to teaching experience (between those under 10 years old and those 10 years old and above).

✓ **Research objectives:**

The study seeks to achieve the following objectives:

- Revealing the level of reality of teaching English in Algerian middle school schools, in light of the current educational policy, from the point of view of middle school teachers.

- Identify whether there are statistically significant differences in professors' view of teaching English due to the gender variable (males / females), and determine in favor of which category these differences are.

- Clarify whether there are differences in professors' opinions about teaching English in intermediate-level educational institutions due to professional experience (less than 10 years/10 years and over).

✓ **Importance of research:**

This study gains its importance from its treatment of the reality of teaching English at the intermediate level, as it is a basic language in the era of globalization. Its importance lies in highlighting the factors that hinder students' learning, teachers' perceptions of the challenges they face, and analyzing the extent to which the curriculum is compatible with the requirements of the times. It also contributes to submitting proposals to improve the quality of education, and provides those in charge of the educational system with scientific data that supports the development of educational policies and teacher training.

✓ **Procedural concepts used in the study:**

The research is linked to a set of concepts related to the study variables, which the researcher addresses as follows:

A- Teaching:

The researcher defines it procedurally as: all the activities and practices carried out by the intermediate English language teacher within the classroom, whether in planning lessons, implementing them, using educational tools, interacting with students, or employing language teaching strategies and methods, as perceived and evaluated by the teachers themselves through their response to the items of the questionnaire adopted in this study.

B- English language:

Procedurally, it is: the educational material prescribed in the intermediate stage curriculum in Algerian schools, which aims to develop the four linguistic competencies (listening, speaking, reading, writing) among students. It is also taught by intermediate education teachers, and its reality is evaluated through their opinions and responses to the study questionnaire.

C- Educational policy:

It is procedurally defined as: the set of official directions and plans adopted by the Ministry of National Education in Algeria to organize English language teaching at the intermediate level, including curriculum objectives, program content, evaluation methods, and teacher training

D- Requirements of the era:

It is procedurally defined as: the set of linguistic, technological, and communication skills and competencies imposed by contemporary reality, especially in light of digital transformations and global cultural openness, which require the learner to master the English language as a necessary tool for continuous learning, access to knowledge, and interaction with the world, as middle school teachers perceive it in their assessment of the reality of teaching this language.

- ✓ **Reasons and motivations for choosing a topic for study:**

This topic was chosen based on the researcher's personal interest in the field of teaching and learning foreign languages, particularly English, given its critical importance in the era of globalization and digital literacy, and its pivotal role in supporting communication and scientific and cultural openness. The researcher also noted a relative scarcity of field studies that address the reality of teaching English at the intermediate level from the teachers' perspective, compared to available studies at the primary and secondary levels. This deficiency has provided a scientific impetus to explore this reality more deeply. In addition, the multiple challenges facing English language teaching, whether from the learner, teacher, or curriculum, are among the most significant obstacles affecting the effectiveness of the educational process. This requires a serious scientific study that sheds light on these difficulties and suggests ways to overcome them in line with contemporary requirements and the trends of educational policy in Algeria.

2. Theoretical framework of the study:

1.2. Teaching English (General concepts and foundations):

A- Definition of language:

In his book Language and Society, Dr. Mahmoud Al-Saaran quoted several opinions from scholars from different specializations about the concept of language. We will suffice with pointing out only the most important of them, which are:

1 - Language is the expression of ideas through speech sounds combined into words.

2 - Language is a purely human and completely non-instinctive means of communicating thoughts, emotions and desires through a system of symbols issued voluntarily (Sahrawi, 1998, p. 30).

IbnKhaldun also provides an advanced definition in his introduction, saying: "Language in conventional terms is the speaker's expression of

Its purpose, and that phrase is a linguistic act arising from the intention to benefit speech, must become a decided faculty in its active organ, which is the tongue, and it is in every nation according to their terminology. For him, language has sounds that were said intentionally to indicate meaning, and the tongue is the tool that produces it. In another place, he says, "Language is a faculty in the tongue, and so is calligraphy, the creation of its faculty in the hand" (Okasha, 2006, p. 17).

Based on the aforementioned definitions, the researcher defines language as: Language is a system of phonetic symbols that a person formulates intentionally and willingly to express his thoughts, emotions, and desires. It is a social tool and an acquired faculty in the tongue that is used in communication and understanding within the linguistic group, and its characteristics are determined according to the cultural norms and terminology of each society.

B- Definition of the English language:

English is an international language that is widely spoken in almost all countries of the world. This is due to its use in various fields, such as business and study. It is one of the means of global and diplomatic communication between peoples around the world. English is known as a Western language belonging to the ancient Germanic languages, which developed over time due to the use of many dialects, which contributed to adding a set of new vocabulary and linguistic structures to it. The English language is still developing to this day, and this is due to the continuous development that man faces and the permanent inventions (AbdRabbo, p. 01).

C- The importance of the English language:

English is one of these languages, as it is the world's first language in terms of its use in communication and in various fields such as diplomacy, politics, commerce, technology, academia, and others. To keep pace with the times and learn about the latest developments in various sciences and knowledge, peoples and nations must learn this language. Therefore, many individuals seek to learn the English language greatly, and this has contributed to the specialization of international curricula specifically for the English language. The importance of learning the English language, as stated in (2016, Oxford Royale Academy), is summarized according to the following points:

-Mandarin is classified as the most widely spoken language as a primary language (mother language)only, while English is the most widely spoken language in most public fields.

-English contributes to providing many opportunities for individuals, such as helping them find work. Most job interviews rely on English as a prerequisite for individuals to accept the job they are applying for.

-English is the official language of many types of university fields of study, such as science, medicine, engineering, economics, business administration, and other educational fields that many university students seek to study.

-The English language helps increase the ability to read books, magazines, and research published based on them which supports the development of science, knowledge and personal culture among individuals.

-The English language offers a range of means of communication between different peoples, contributing to the recognition of global folk customs, heritage, and traditions.

-English is widely used on websites on the Internet, as learning it helps individuals learn about the nature of websites and the content published on their various pages (Al-Askari, 2022, pp. 1388-1389).

E - Prospects for teaching English in Algerian schools:

The decision to support Algerian schools with English from the primary stage will raise the educational and cognitive level of students at all levels, because English is the language of the future and the language of development And technology, so Algerian society began to teach and learn it, and welcomed the idea of including it in educational institutions alongside the French language, for a new beginning for the people and the country alike.

Teaching English is an important gain for the educational system in general and the Algerian child in particular, as the English language enables the child to acquire the ability to think in a universal language and to be flexible in solving problems. Acquiring this language enhances the student's self-confidence and facilitates the process of "accessing the sources of knowledge and scientific and technical documentation available in that language, especially information related to automated media." It allows him to access international scientific platforms that rely heavily on English, and helps him deal with computer software and various contemporary technology applications. In addition to all these gains, it cannot be overlooked that teaching the English language serves scientific research in general, as it contributes to expanding the scope of scientific publishing, which has become more dependent on the English language. Publishing in French has recently restricted the researcher and limited his chances of publishing, unlike the English language, which opens up broad horizons for him to publish" (Botghan, 2024, pp. 153-154).

F- Obstacles to learning the English language:

These obstacles can be divided into the following groups:

1- Psychological obstacles: These relate to the nature of the human psyche and include a preconceived view of language and misconceptions about learning a foreign language.

2- Administrative obstacles: lack of money and management

3- Technical obstacles: These include shortcomings in the curriculum and aspects related to the language itself and its differences from the mother tongue.

4-Obstacles to the general educational system: These obstacles are represented in several things, including:

-Lack of clarity of goals for the teacher, learner, and parents.

-The presence of study burdens and extracurricular activities that burden the teacher and limit his role in achieving the set goals.

- Traditional teaching methods that are not in line with the conceptThe nature of contemporary learning (Kahul, 2012, p. 133).

3. Field study procedures:

1.3. Study methodology:

To verify the hypotheses of the current study, the researcher used the descriptive analytical approach, which is based on an accurate description of the reality of teaching English in Algerian schools from the perspective of middle school teachers, and analyzing the dimensions of this reality in light of educational policy and the requirements of the era. It also relies on comparing study variables, such as gender and professional experience, with the aim of revealing potential differences in teachers' perceptions of the reality of teaching and the challenges associated with it.

2.3. Limits of the study:

The field study was conducted in a group of averages in the state of Relizane, and in particular in my district Mazouna and SidiM'hamed Ben Ali in Algeria, and it was implemented during the second semester of the 2024/2025 academic year

3-3 - Study community:

The study community is represented by English language teachers who perform their duties in the intermediate schools in the previously mentioned state.

3-4 - Study sample and specifications:

A random sample of (42) male and female English language professors was selected, distributed over a set of averages across the two districts previously concerned with the state of Relizane, and we summarize their specifications in the following explanatory table according to gender and professional experience as follows:

Table N° (01): the specifications of the study sample

Variables	Experience		Gender	
School Name	(≥ 10 years)	(< 10 years)	(Female)	(Male)

Ahmed Zabana, BeniZentis	1	3	3	1
BelâsselAbdelkader, BeniZentis	2	2	2	2
SadekAbdelwahab, Médiouna	0	3	2	1
Larbi Ben M'hidi, Médiouna	1	2	3	0
BelabbassiAbdelkader, Médiouna	2	1	2	1
BouamoudAbdelkader, Médiouna	1	2	2	1
16 April, SidiM'hamed Ben Ali	3	1	2	2
Khaled Ben AinEsSemmene, S.M.B.A	1	2	2	1
ToumiAbdelkader, AïnMatboul	3	1	2	2
ToumiAbdelkader, El Guettar	2	1	2	1
New Middle School, El Guettar	2	2	2	2
Heni Ben Heni, OuledMeziane	1	3	2	2
Total	**19**	**23**	**26**	**16**

It is clear from Table No. (01) that the number of female English language professors reached 26 professors, which is considered a greater value compared to the number of male English language professors, which reached 16 professors, with a difference of 10 professors from the total members of the study sample as a whole It is also clear that the number of English language professors of both sexes with professional experience of less than 10 years reached 23 female professors (A), which is considered a greater value compared to the number of English language professors of both sexes with professional experience of 10 years and above, which reached 19 female professors (A), with a difference of O4 female professors (A) out of the total members of the study sample as a whole.

3.5. Study tools:

In his study, the researcher relied on a questionnaire regarding middle school teachers' view of the reality of teaching the English language in secondary educational institutions in Algeria. To achieve the objectives of the study and collect more Data, information and facts related to this topic. The researcher built a questionnaire consisting of (44) items, distributed over four dimensions as shown in the following table:

Table N° (02): Research Axes and Their Objectives

N°	Axis	Objective
1	Evaluation of the English curriculum	To evaluate the curriculum in terms of its objectives, content, and suitability for learners.
2	Teacher training and retraining	To assess the teacher's competence and training in teaching English.

3	Evaluation of pedagogicalresources	To examine the tools, support, and educational environment.
4	Obstacles to teaching English	To identify the difficulties teachers face in teaching English.

3-6 - Study tool:

Correction key: always = 3 degrees, sometimes = 2 degrees, rarely = 1 degree.

3-7 - Psychometric properties of the study tool:

A - Honesty: the honesty of the arbitrators

The study tool was presented to seven judges specializing in educational psychology, to express their opinion on the soundness of the linguistic formulation and the extent to which the paragraph is appropriate and belongs to the appropriate dimension. The approval of (86%) was also adopted as evidence of the validity of the tool, so that the questionnaire took its final form and now consists of (40) paragraphs distributed equally over four dimensions.

B - Stability through internal consistency of the dimensions of the scale:

The internal consistency of the scale was calculated by calculating the correlation coefficients between each of the four dimensions of the scale and the total score of the scale as shown in Table No. (02).

Table N° (03): Internal consistency of scale dimensions.

N°	Dimension	Correlation Coefficient	SignificanceLevel
1	Evaluation of the English curriculum	0.56**	0.00
2	Teacher training and retraining	0.48**	0.01
3	Evaluation of pedagogical resources used	0.67**	0.00
4	Obstacles to teaching English	0.52**	0.00

It is clear from Table **N°** (03) that all correlation coefficients between each of the four main dimensions of the scale and the total score of the scale are significant at a significance level of (0.01), and this confirms the internal consistency of the scale.

4.Present and discuss the results:

4-1- Presenting and discussing the results of the first hypothesis:

Which states: There is an average level of reality in teaching English in Algerian middle school schools under the current educational policy from the point of view of middle school teachers.

The arithmetic averages and percentages of the areas of the study tool were extracted, after performing the following calculation: (highest value – lowest value)/3 = (120–40)/3 = 26,66.

From it, the researcher obtains the areas of estimates of the degrees of view of intermediate education professors on the reality of teaching the English language as follows: (40-66.66) low level, (66.61–93.27) intermediate level, (93.27–120) high level. It will be discussed by discussing its partial hypotheses, which are as follows:

Table N° (04): The arithmetic average of the level of view of intermediate education professors regarding the reality of teaching the English language.

Statistical Variables	Sample Size	Mean	Standard Deviation	Level
General hypothesis of the study: Perception of middle school English teachers regarding the reality of English language teaching	N = 42	84.50	3.09	Moderate

It is clear from the table above that the level of view of intermediate education professors regarding the reality of teaching the English language came with a standard deviation of (3.09) and an arithmetic mean of (84.5O), which is limited within the limited average range between (66.61–93.27), and this indicates an average score, which is consistent with the text of the first hypothesis that we expected.

This result is consistent with the results of the study of Faqih (2009), which aimed to explore the level of application of the procedures for teaching the skill of speaking English by fourth-year middle school teachers according to the communicative approach. It asked about the general level of its application, and the results were as follows: The general level of the study sample in the procedures for teaching the skill of speaking is low. The monthly study (2021) also aimed to identify the attitudes of middle school English teachers towards using the flipped classroom in teaching English. The results showed that there are positive trends among middle school English teachers towards using the flipped classroom in teaching English. It was consistent with Al-Jaboul's study (2014), which aimed to determine the level of English language teachers' awareness of their professional development at various educational levels in public schools in Madaba Governorate, as its results showed that the level of English language teachers' awareness at various educational levels of their professional development was moderate in all fields.

It was consistent with the study Qadi (2008), which aimed to know the reality of using educational methods and modern technologies in the intermediate stage to teach the English language; From the point of view of educational supervisors and school principals in Mecca, its results concluded that the degree to which English language teachers use educational methods and modern technologies is average. As well as Odeh's study (Odeh, 2000), which aimed to identify the most important strategies used by English language teachers for the eleventh grade in teaching various literary works. The study also aimed to identify teachers' attitudes towards teaching literature, the impact of teaching literature on students' use of language, and the curriculum often used in teaching various literary works. Its results revealed that teachers' attitudes towards teaching English literature as part of language teaching were mostly positive. As well as the study of Al-Hawshani and Al-Nusyan (2020), which revealed the practices of English language teachers in teaching writing skills at the secondary level in the Qassim region, its results concluded that the positive trend towards the teaching profession led them to search for more creative ways in teaching writing skills. In addition to The Harqas study (2024) aimed to monitor and know the attitudes of English language teachers in the primary stage towards training, as its results concluded that the attitudes of teachers towards training goals were positive, while they contradicted this result with regard to the content of training and the duration of training, as their attitudes were negative, and it also contradicted the Qasimi study (2023) which aimed at the attitudes of primary education teachers towards including the English language in the primary education stage The results showed that professors' attitudes towards including the English language were positive.

This result can be explained by the fact that the level of perception of middle school teachers regarding the reality of teaching the English language was moderate, and did not reach the desired level. This is due to some factors and obstacles, including: Teaching the English language in the middle school stage suffers from several obstacles, the most prominent of which is the lack of clarity in the educational objectives in the curriculum, which

makes it difficult for the teacher to accurately determine the targeted competencies. There is also a lack of pedagogical and technical training, especially with regard to the use of modern methods and interactive teaching methods. Financial capabilities within institutions, such as the absence of audio-visual aids and specialized departments, weaken the quality of learning. The high number of students in the department and the small number of weekly classes allocated to the subject also affect opportunities for interaction and effective practice. In addition to this, students' weak motivation and programs' failure to keep pace with modern requirements, particularly in terms of technology integration and global communication.

4 - 2 - Presentation and discussion of the results of the first sub-hypothesis:

Which states: There are differences in the view of male and female professors towards teaching English in educational institutions in the intermediate education stage, and in favor of females

Arithmetic averages were extracted and (T) was tested to identify the differences between two different groups, and after conducting statistical analysis, the results were reached according to the following table:

Table N° (05): Test results (T) for differences in the perception of male and female teachers towards teaching English in educational institutions in the intermediate education stage.

Variables	Standard Deviation	Degrees of Freedom (df)	T-value (t)	SignificanceLevel (sig)
Males	2.11	40	30.78	0.02
Females	3.12			

From the table above, it was found that the value of (t) is equal to 30.78, and that the arithmetic mean for males was 83.65, and the arithmetic mean for females was 87.43, and the value of the calculated significance level (sig) is equal to 0. 02 is a statistically significant value at $\alpha = 0.05$, and from this it can be said that there are differences in the view of male and female professors towards teaching English in educational institutions in the intermediate education stage, and in favor of females.

This result contradicted Al-Jaboul's study (2014), which aimed to determine the level of English language teachers' awareness of their professional development at various educational levels in public schools in Madaba Governorate, as its results showed that there were no statistically significant differences in the level of English language teachers' awareness of their professional development attributed to the gender variable (teachers). Also with Odeh's study (Odeh, 2000), which aimed to identify the most important strategies used by English language teachers for the eleventh grade in teaching various literary works. Its results found that there were no statistically significant differences in all aspects attributed to the teacher gender variable. In addition to the monthly study (2021), which aimed to identify the trends of English language teachers in the intermediate stage towards using the flipped classroom in teaching the English language. The results showed that there were no statistically significant differences at the significance level of 0.05 or less in the attitudes of middle school English teachers towards using the flipped classroom in teaching English, attributed to the gender variable.

This result can be explained by differences in the perception of male and female teachers towards teaching English in educational institutions in the intermediate education stage, and in favor of females, for several possible reasons, including:

Female teachers show a greater tendency to adhere to courses and implement formal instructions, which makes them more aware of the actual reality of teaching English. They also regularly participate in educational and training activities, which enhances their understanding of the challenges of the subject. They are distinguished by their high pedagogical sense and clear organizational accuracy, which is reflected in their evaluation of curricula and teaching methods. In addition, many of them appreciate the importance of English in the digital age and cultural openness, which makes them more realistic and critical in their observations. While it is noted that males may tend to have a more general outlook, females tend to analyze and detail

4-3- Presentation and discussion of the results of the third hypothesis:

Which states: There are differences in the teachers' view of teaching English in educational institutions in the intermediate education stage, according to teaching experience (between those under 10 years old and those 10 years old and above).

Arithmetic averages were extracted and T was tested to identify differences between two different groups, and after conducting statistical analysis, the results were reached according to the following table:

Table N° (05): Test results (T) for differences in professors' view of teaching English in educational institutions in the intermediate education stage according to the variable of teaching experience.

Variables	Standard Deviation	Degrees of Freedom (df)	T-value (t)	SignificanceLevel (sig)
Less than 10 years of experience	3.11	40	2.31	0.001
10 years of experience or more	2.97			

From the table above, it was found that the value of (T) is equal to 2.31, and that the arithmetic mean among professors with professional experience of less than 10 years was 88.78, while the arithmetic mean among professors with professional experience of 10 years and more was 81.33, and the value of the calculated significance level (SIG) is equal to 0.001, which is a statistically significant value at $\alpha = 0.01$, and from this it can be said that there are differences in the professors' view of teaching English in educational institutions in the intermediate education stage, according to teaching experience, and in favor of those with professional experience from 10 years and above).

This result contradicted the study of Al-Jaboul (2014), which aimed to determine the level of English language teachers' awareness of their professional development at various educational levels in public schools in Madaba Governorate, as its results showed that there were no statistically significant differences in the level of English language teachers' awareness of their professional development due to the variable of years of professional experience. It also contradicted Odeh's study (Odeh, 2000), which aimed to identify the most important strategies used by eleventh-grade English language teachers in teaching various literary works, and its results revealed that there were no statistically significant differences in all aspects attributed to the variable of his years of experience. In addition to the monthly study (2021), which aimed to identify the trends of English language teachers in the intermediate stage towards using the flipped classroom in teaching the English language. The results showed that there were no statistically significant differences at the significance level of 0.05 or less in the attitudes of middle school English teachers towards using the flipped classroom in teaching English, attributed to the number of years of teaching experience.

The researcher attributes this difference in the differences in the professors' view of teaching English in educational institutions in the intermediate education stage, according to the variable of professional teaching experience and in favor of professors with professional experience of less than 10 years, to several possible reasons, including: the tendencies of professors with experience of less than ten years to have a more positive and modern perception of the reality of teaching English, given that they have received modern training in line with new educational trends, And their openness to using digital means in education. They are also highly motivated and enthusiastic about innovation, driven by their desire to prove their professional competence. In contrast, professors with long experience adopt a more conservative or critical view, as a result of the accumulation of field problems and their feeling of dissatisfaction with the pace of development of educational conditions.

5 - General summary:

The study concluded that teaching English at the intermediate level in Algeria still faces several challenges, despite efforts to develop it. The results revealed average perceptions among teachers, reflecting a gap between educational policy and actual implementation. She also explainedthat the current curricula need to be reviewed

to suit the students' level and the requirements of the times. Differences were found related to gender and professional experience, with female professors and those with less experience showing greater openness to modern methods. Poor pedagogical conditions are also a major obstacle. The study recommends the need to review curricula, improve the work environment, and intensify continuous training to advance English education.

6 -Recommendations:

In light of the study results, the researcher recommended the following: supporting teacher training in modern methods and technology, reviewing curricula to suit students' level and contemporary requirements, improving teaching methods and conditions, and motivating Learners with interactive activities, and the adoption of a comprehensive national language policy for teaching foreign languages.

Acknowledgment

The author extends sincere appreciation to the **Education and Development Laboratory** at the **University of Oran 2 Mohamed Ben Ahmed** for providing academic guidance and institutional support throughout this research. Deep gratitude is also expressed to all the **English-language teachers** who participated in the study and generously shared their professional insights and classroom experiences. Their contributions were invaluable in enriching the empirical depth and practical relevance of this research.

Ethical Considerations

This study was conducted in accordance with the **ethical research standards** established by the **University of Oran 2 Mohamed Ben Ahmed** and conforms to the principles of the **Committee on Publication Ethics (COPE)**. Participation in the study was entirely **voluntary**, and all respondents were informed about the purpose and confidentiality of the research. No personal identifiers were collected, and all data were analyzed anonymously. The researcher ensured that participants' rights, privacy, and professional dignity were fully respected throughout all stages of the investigation.

Funding

This research **did not receive any specific grant** from funding agencies in the public, commercial, or not-for-profit sectors. The study was conducted as part of the author's independent academic work at the **University of Oran 2 Mohamed Ben Ahmed**.

Conflict of Interest

The author declares **no conflict of interest** related to the authorship or publication of this article. All analyses, interpretations, and conclusions presented herein reflect the author's independent scholarly work and do not necessarily represent the official views of the affiliated institution.

References

1. Al-Araimi, K. K. A. (2021). *Difficulties facing students in learning English language skills: A descriptive survey study in light of the results of research and studies. Arab Journal of Humanities and Social Sciences, 3*(3), 1–33.

2. Al-Askari, M. A. b. A. b. O. (2022). *The reality of English language teachers' use of the electronic gaming strategy from the point of view of educational teachers and supervisors. Journal of the College of Education, 118*, 1387–1428.

3. Al-Aubeiki, W. I. A., & Salloum, T. I. (2020). *Evaluating English speaking skills among first-year secondary school students in the Qassim region. Mansoura College of Education Journal,* 900–934.

4. Al-Hawshani, A. A. A., & Al-Nusyan, A. R. M. N. (2020). *The reality of teaching practices for English language teachers in teaching writing skills at the secondary level in the Qassim region: A case study. Journal of the Faculty of Education – Al-Azhar University, 39*(185), 725–765. https://jsrep.journals.ekb.eg/article_84732_b0b0413ee4ba9a404a4223183b29fdd8.pdf

5. Al-Jaboul, A. A. O. (2014). *The level of awareness of English language teachers at various educational levels regarding their professional development in public schools in Madaba Governorate* (Master's thesis, Middle East University). Faculty of Educational Sciences.

6. Al-Khatib, A. (1997). *Basics of teaching methods* (2nd ed.). Dar Al-Masirah.

7. Al-Shahri, A. D. (2021). *Trends of middle school English teachers towards using the flipped classroom in teaching English. Arab Journal of Educational and Psychological Sciences, 5*(22), 309–335. https://search.emarefa.net/detail/BIM-1248432

8. Al-Sahrawi, B. (1998). *On the concept of language and its social extensions. Researchers' Journal, 5*(1), 27–55.

9. Alcohol, S. (2012). *Difficulties in learning the English language: A field study in light of the opinions of middle school teachers in the city of Biskra. Journal of Humanities, 12*(1), 125–139.

10. Butghan, S. (2024). *Teaching the English language in Al-Jaziriyah School: Its prospects and challenges – The primary stage as a model. Al-Sarraj Magazine on Education and Community Issues, 8*(1), 149–159.

11. Djaidja, A., & Bacher, A. (2024). *Assessing EFL learners' intercultural communicative competence: The case of second-year students at Mohamed Boudiaf University of M'sila, Algeria. Rufuf Journal, Laboratory of Algerian Manuscript, 1*, 191–819.

12. Faraj, A. L. H. (2008). *Modern teaching methods in the twenty-first century.* Dar Al-Masirah for Publishing and Distribution.

13. Harqas, M. (2024). *Trends of English language teachers in primary school towards training programs* (Master's thesis, University of Guelma). College of Humanities and Social Sciences.

14. Okasha, M. (2006). *Linguistics: A theoretical introduction to the Arabic language* (Vol. 1). University Publishing House.

15. Odeh, S. (2000). *The strategies used by the English language teachers of the 11th grade and their attitudes toward teaching the different literary texts in the northern districts of Palestine* (Master's thesis). An-Najah National University. https://repository.najah.edu/items/b8eeb452-9cc8-41f6-ab5b-cca557d0793f

16. Qadri, I. A. A. (2008). *The reality of using educational methods and modern technologies in teaching English at the intermediate level from the point of view of English language supervisors and school principals in Makkah Al-Mukarramah* (Master's thesis, College of Education, Makkah Al-Mukarramah).

17. Shihab, M. S. I. (2021). *Educational technology and teaching aids. Supplement to the Iraqi University Journal.*

18. Tarhiwa, N. (2021). *Teaching the foreign language in the Algerian school based on the inevitability of reality and future aspirations. Bidayat Magazine, 2*(4), 173–184.

International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Dynamic Impact of Real Exchange Rate Movements on Domestic Savings in Algeria: An Econometric Investigation Using the ARDL Approach (1980–2023)

Menad Mhammed
Doctor
University of Ain Temouchent
Algeria
E-mail: mhammed.menad@univ-temouchent.edu.dz
ORCID: https://orcid.org/0009-0006-7769-0881

Serdouk Bellahouel
Doctor
University Mustapha Stambouli, Mascara
Algeria
Email: serdoukbellahouel@gmail.com
ORCID: https://orcid.org/0009-0007-2697-9340

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Real Exchange Rate; Domestic Savings; ARDL Model; Algeria; Macroeconomic Stability; Exchange Rate Policy

Abstract

The interaction between the real exchange rate and domestic savings constitutes a critical nexus in the formulation of macroeconomic policy, particularly for emerging economies that rely heavily on external financing and exhibit structural vulnerabilities. This study empirically investigates the long- and short-run effects of real exchange rate fluctuations on domestic savings in Algeria over the period 1980–2023. Employing the Autoregressive Distributed Lag (ARDL) bounds testing approach, the analysis aims to uncover both the dynamic causal relationship and the degree of responsiveness of domestic savings to exchange rate volatility, while controlling for other macroeconomic determinants such as GDP per capita, trade balance, and money supply (M2). The econometric results confirm the existence of a statistically significant and stable long-run equilibrium relationship between the real exchange rate and domestic savings. Specifically, real exchange rate depreciation is found to exert a positive and sustained effect on domestic savings in the Algerian economy. This relationship is explained by improved export competitiveness, higher returns in tradable sectors, and increased profitability of productive enterprises, which together stimulate household and institutional savings behavior. In contrast, real appreciation reduces export earnings and discourages saving in favor of consumption. In addition, the findings reveal that GDP per capita and trade balance improvements positively influence domestic savings, while money supply expansion has a long-term negative effect, mainly through inflationary channels and higher marginal propensity to consume. The short-run dynamics, captured through the ARDL error-correction model, indicate partial adjustment of savings to exchange rate shocks, with the speed of convergence estimated at approximately 42% per annum.The study concludes that macroeconomic stability in Algeria requires a prudent and predictable exchange rate policy aligned with coherent fiscal and monetary frameworks. Policymakers are advised to adopt a managed floating exchange regime that sustains competitiveness while preventing excessive volatility. Strengthening the coordination between exchange rate management, inflation control, and financial market deepening is essential for

enhancing domestic savings mobilization, reducing external dependency, and achieving long-term economic resilience.

Citation. Menad M; Serdouk B. (2025). The Dynamic Impact of Real Exchange Rate Movements on Domestic Savings in Algeria: An Econometric Investigation Using the ARDL Approach (1980–2023). *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1166–1182. https://doi.org/10.56334/sei/8.11.96

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 03.05.2025	Accepted: 15.07.2025	Publishing time: 10.10.2025

1- Introduction

Domestic savings, in particular for emerging countries seeking to increase their self-financing capacity, reduce their external debt burden, and reduce their dependence on external sources, are one of the most important financial foundations for investment and long-term economic growth. High savings rates are a key determinant of economic policy stability and efficiency of financial institutions.

Economists have focused more on factors that affect domestic saving rates, such as economic factors such as inflation, interest rates, and national income; demographic factors such as the level of indebtedness; and institutional factors such as political stability and confidence in the banking system. One of the most important of these factors is the real exchange rate, which is considered to be an economic variable with direct or indirect effects on the saving behaviour of institutions and individuals, as it is closely correlated to the price level of imported goods, wages and economic competitiveness.

Questions have been raised as to whether real exchange rate depreciation policies can help to boost domestic savings in view of global economic developments and greater exchange rate flexibility in most economies. According to some hypotheses, devaluation would improve tradable industries, increase trade surpluses, and reduce demand for imports, all of which would have a beneficial effect on saving. Falling purchasing power may also cause households to save to protect themselves against future price uncertainty.

Based on these facts and in order to learn more about the link between domestic savings and the exchange rate, the study provides new information on the Algerian economy, which is highly affected by the imbalances of trade and exchange rates. In view of this, the following question is put to you:

How does the level of domestic savings in Algeria change in response to changes in the real exchange rate?

Hypothesis:
Algeria's domestic saving rate improved due to the depreciation of the real exchange rate. Relevance of the research:

This study is important in that it clarifies two important aspects of Algerian economic policy and how they influence the factors which determine the savings balance analysis. It is essential to develop more effective economic policies to tackle the fiscal and financial deficits.

Study Objective:

The aim of this study is to examine the relationship between real exchange rates and national savings in Algeria over a short period of time, based on theoretical and econometric estimates. This will help to formulate proposals that can guide policymakers to create more sustainable and efficient exchange and saving policies..

2. Theoretical frameworkand Literature Review:

This section includes empirical data derived from relevant international and regional research and an overview of the primary real classifications that have examined the impact of the exchange rate on household saving. It aims to

clarify the links examined in this context, which apply in the Algerian case, and to place the present study in the context of the existing knowledge.

2.1 Theoretical Transmission Mechanisms

Real exchange rates and household saving are linked by a series of mechanisms proposed by economic theory, which often paints a complex picture, depending on structural economic conditions.

2.1.1 The Competitiveness and Sectoral Profitability Channel

Among these studies, the most famous is the Turner Philip (1988) comparison of the US, Japan and Germany. The author examined the impact of savings and investment balances on the current account. The study looked at how governments, businesses, and consumers save and invest, and how these factors are related to real exchange rates, interest rates, and income. The findings showed that real exchange rates have a greater impact on current account volatility than interest rates and that they are inversely correlated to the household saving surplus. These findings add to the literature on global imbalances by comparing the savings-investment-fundamentals strategy with traditional foreign-trade models, where the exchange rate is central. (Turner, 1988)

Gala Paulo and Marcos Rocha (2009) used panel models using gross margin estimates to investigate the relationship between real exchange rates and household saving in several middle-income countries. The findings show that the declining real exchange rate boosts the incomes of export-producing industries, making their products more affordable and competitive on international markets. This will help increase the level of household savings. This allows investments to be made. This shows how the exchange rate can be a reliable tool to support saving and growth. (Gala & Marcos, 2009)

Presser Prereira and Luiz Carlos (2014) examined the relationship between the real exchange rate in Brazil from 1994 to 2013 and both domestic and external savings. The study found that when domestic currency is valued to finance the current account deficit, domestic savings fall, because the estimated profitability of the tradable goods sector declines, discouraging potential investors from investing in the sector. As a result, companies and individuals are forced to reallocate resources to foreign investment or consumption. As a result, domestic savings are being replaced by foreign savings. (Bresser, Luiz, Eliane, & Paulo, 2014)

2.1.2. The Redistribution Channel (Wages vs. Profits)

According to Keynesian literature, domestic saving is influenced by the real exchange rate, which affects wages and earnings as well. In the tradable goods sector, appreciation tends to result in reduced profits while real wages rise, reducing the incentive to save and increasing consumption. On the other hand, depreciation increases profit margins and reduces real wages, which boosts exports and investment and raises incomes, thereby supporting domestic savings growth. In an open economy, a real-exchange-rate depreciation increases exports and reduces consumption as a percentage of output, thereby increasing domestic saving and reducing dependence on foreign savings (Marshall-Lerner condition). The economy is moving towards consumption-led development with a current account deficit and low domestic savings when the currency is overvalued relative to its equilibrium value. (Gala & Marcos, 2009, p. 6)

2.1.3. The Consumption-Smoothing and Precautionary Saving Channel

According to Keynesian literature, domestic saving is influenced by the real exchange rate, which also has the effect of weakening the real exchange rate can reduce the real purchasing power of households by increasing import costs. This may lead to a short-term reduction in savings. But people may save to protect themselves against future income shocks if they believe the depreciation will be permanent, or if economic uncertainty increases (Keynesian stimulus). The relative strength of the effects on substitution and revenues determines the net impact. (Alexander, 1998)

Razmi, Rapetti and Skott (2012) confirm that maintaining a competitive real exchange rate is a key element in achieving long-term economic balance in developing countries. The depreciated real exchange rate helps to channel resources into productive and export sectors, encouraging capital accumulation and an increase in investment rates, rather than inflows of resources, which cause consumption booms and threaten stability at large. This system helps to achieve sustainable household savings and to reduce consumption over-indebtedness. This

explains why many emerging economies, such as China, have succeeded in using a competitive exchange rate as a tool to stimulate both growth and saving. (Razmi, Rapetti, & Skott, 2012, pp. 9-10)

According to the theory of some economists, including Presser Pereira, the appreciation of the local currency to finance the current-account deficit reduces the profitability of the tradable-goods sector, which in turn reduces domestic savings and encourages foreign savings. (Bresser, Luiz, Eliane, & Paulo, 2014)

But other scholars believe that the effect of the real exchange rate on capital accumulation may have an indirect effect on saving. The fall in the real exchange rate could be due to an increase in savings, which are then used to finance investments. This pattern is also evident in countries such as China, South Korea, Malaysia, Thailand, and Chile, which have experienced strong and sustained economic growth, but also falling real exchange rates and high savings rates. Others, such as Mexico before 1995, followed the opposite pattern, with real exchange rates rising and economic growth and savings falling. (Montiel & Luis, 2008, p. 4)

2.1.4 The Monetary and Institutional Channel

In this respect, Helpman and Razin (1984) provide a theoretical framework to explain how the international payments system affects the relationship between the national saving and the exchange rate. While the role of investment is more clearly evident in the currency system of the seller, where saving has an indirect effect through capital accumulation and investment financing, saving is directly determinant of the exchange rate in the currency system of the buyer, through its impact on relative consumption between countries. As a result, the link between household saving and the exchange rate depends on the type of monetary mechanism used in business transactions and is not absolute or linear in nature.

The researchers expressed this mathematically in two simplified forms:

a- In the seller system (S):

$$e_t = \left(\frac{Y_{F,t}}{Y_{H,t}}\right)\left(\frac{M_{H,t}}{M_{F,t}}\right)$$

The exchange rate is linked to the relative money supply (M) and the net investment-linked output (Y). This makes investment the main determinant of exchange rate movements, whereas saving effects are indirectly felt through capital accumulation..

b. In the buyer's system (B):

$$e_t = \left(\frac{C_{F,t-1}}{C_{H,t-1}}\right)\left(\frac{M_{H,t-1}}{M_{F,t-1}}\right)$$

The exchange rate is based on the relative money supply (M) and relative consumption (C), which in turn are influenced by the household savings habits. Here, the exchange rate is directly linked to household savings through relative consumption.

Savings thus directly affect the exchange rate through spending and consumption patterns. The institutional framework and monetary mechanisms governing international trade thus affect the relationship between domestic savings and the exchange rate, which are not absolute and linear.. (Helpman & Razin, 1984)

Study of Senturk and Ali. (2021) , According to the study on the effectiveness of monetary policy channels in emerging countries (Turkey, Russia, Mexico and Chile), the exchange rate channel is an important and diverse aspect of conveying the effects of monetary policy. The findings showed that Turkey has been remarkably effective in this channel, as changes in interest rates have triggered a strong exchange rate reaction, which in turn affects macroeconomic factors, including inflation and investment.

By contrast, in Russia, Mexico, and Chile, the channel was less effective, and the exchange rate response to monetary policy changes was less pronounced. Structural factors, including the type of exchange rate regime in place, the degree of economic openness, and the growth rate of financial markets in each country, are blamed for

the difference. In addition to the general weakness of the interest rate channel observed in all countries surveyed, the study also highlighted the complex relationship between the exchange rate channel and other channels. This relationship shows that in emerging economies, monetary policy effects on exchange rates are not always fully passed on to the real economy.. (Senturk & Ali, 2021)

2.2. Empirical Evidence: A Survey of Conflicting Findings

These theoretical problems are reflected in empirical research that shows that the relationship varies according to the country, time period, and methodology.

2.2.1. Evidence Supporting a Positive Effect of Depreciation

According to numerous studies, real depreciation of the exchange rate encourages savings. Gala & Rocha (2009) found in a panel of middle-income countries that a competitive real exchange rate increased the profitability of export sectors, which in turn increased savings. (Gala & Marcos, 2009). Similar to this one, Razmi and others. (2012) argued that, as the Chinese experience has shown, maintaining a depreciated real exchange rate helps emerging countries avoid consumption bubbles and channel resources to profitable investments, thus promoting sustainable saving. (Razmi, Rapetti, & Skott, 2012)

2.2.2. Evidence Supporting a Negative or Non-Linear Relationship

The relationship between the exchange rate and household saving has also been the subject of much research. The findings of these studies varied according to the statistical techniques used and the sample of countries concerned. Most showed a negative correlation between the exchange rate and domestic saving. One of the best known of these studies is the Turner Prize-winning study by Philip (1988), contrasting the US, Japan and Germany. The author examined investment and saving balances and how they influence the current account. The study looked at savings and investment by households, governments and businesses, and their relationship to income, interest rates and the real exchange rate. The findings show that the real exchange rate is negatively correlated with the domestic savings surplus and that the exchange rate has a more significant impact on current account fluctuations than the interest rate. By linking the savings-investment-equity strategy to traditional foreign-trade models in which the exchange rate is the key driver, these findings add to the body of work on global imbalances. (Turner, 1988)

Chiu Yibin and Chia-Hung (2016) examined the relationship between saving rates and real exchange rates and trade balances in 76 countries from 1975 to 2010. The study used a smoothed step-through regression model (PSTR) with instrumental variables. The investigation revealed a nonlinear association between variables. The findings apply regardless of the income level of the country, and countries with a higher saving rate than 14.8 percent can improve their trade balance by devaluing their currency or increasing their saving rate. (Chiu & Chia-Hung, 2016)

2.2.3. Evidence from Single-Country and Regional Case Studies

Chiu Yibin and Chia-Hung (2016) examined the relationship between saving rates and real exchange rates and trade balances in 76 countries from 1975 to 2010, and found that saving rates and real exchange rates were in line with each other. The study used a step-through smoothed regression model (PSTR) with instrumental variables. The investigation revealed that the variables are non-linear. These findings apply regardless of income levels, and countries with a higher saving rate than 14.8 percent can improve their trade balance by devaluing their currency or increasing their saving rate. (Bresser, Luiz, Eliane, & Paulo, 2014)

Umoru David and Oluwatoyin Tedunihaiye (2023) examined how the volatility of interest rates and the depreciation of the exchange rate affected the aggregate savings of ECOWAS countries. Using the PMG model, the authors concluded that, except for Niger, exchange rate depreciation had a negative impact on overall savings in most of the countries considered. They claimed that the reason for this was the weakness of their export industries. The study also revealed differences in the performance of the savings accounts of the group member countries as a shock absorber of interest rates. (Umoru & Oluwatoyin Dorcas, 2023)

The Elhendawy Omar study (2025) sought to examine the long-term relationship between Egyptian gross domestic savings and the exchange rate over the period 1980-22. A study using a vector error correction model (VECM) found a statistically significant negative relationship between gross domestic savings and the nominal exchange rate,

with savings declining as the Egyptian pound depreciated. The findings also showed that saving and trade conditions are positively correlated, but that fixed capital formation and the current account balance are negatively correlated. The findings underline the need to improve the conditions for trade and exchange rate stability to increase domestic savings in Egypt. (Elhendawy, 2025)

3- Derivation of the Analytical Model

To derive the relationship between the exchange rate and domestic savings, we begin with the aggregate equilibrium condition for an open economy:

Aggregate Supply = Aggregate Demand

$$OT = DT \dots\dots\dots\dots (01)$$

We have:

$$Y = C + I + G + X - M$$

$$Y - C = I + G + X - M \dots\dots \dots\dots (02)$$

We add taxes and transfers to Equation 02, finding:

$$Y - T + R - C = I + G + X - M - T + R \dots\dots\dots (03)$$

Since disposable income is the income plus transfers minus taxes, we obtain:

$$Y_d - C = I + G - T + R + X - M \dots\dots\dots\dots (04)$$

We have: Disposable Income - Consumption = Savings.
By substituting savings into Equation 04 we find:

$$S = I + G - T + R + X - M \dots\dots\dots\dots (05)$$

Given that exports and imports are affected by exchange rate fluctuations, they can be expressed by the following formulas:

$$X = (X_0 + x_1 e)$$

$$M = (M_0 + m_1 Y + m_2 e)$$

Substituting into Equation 05 we get:

$$S = I_0 + G_0 - T_0 + R_0 + (X_0 + x_1 e) - (M_0 + m_1 Y + m_2 e)$$

$$S = I_0 + G_0 - T_0 + R_0 + X_0 + x_1 e - M_0 - m_1 Y - m_2 e$$

$$S = I_0 + G_0 - T_0 + R_0 + X_0 - M_0 - m_1 Y + (x_1 - m_2)e \dots\dots\dots (06)$$

Let $A = I_0 + G_0 - T_0 + R_0 + X_0 - M_0$

Thus, Equation (06) becomes:

$$S = A - m_1 Y + (x_1 - m_2)e \dots\dots (07)$$

Y: Income

C: Consumption

I: Investment

G: Government Spending

S: Savings

e: Exchange Rate (units of domestic currency per unit of foreign currency)

X: Exports

x_1: The marginal effect of the exchange rate on exports (the slope of exports with respect to the exchange rate).

M: Imports

m_1: The marginal propensity to import (the slope of imports with respect to income).

m_2: The marginal effect of the exchange rate on imports (the slope of imports with respect to the exchange rate).

Equation (07) shows the relationship between savings (S) and the exchange rate (e). The nature of this relationship (direct or inverse) depends on the sign of the expression $(x_1 - m_2)$

A. A case of rising exchange rate:

If we take an appreciation exchange rate (e), the value of the currency will appreciate and thus demand for exports will decrease as domestic goods are now more expensive in relation to foreign goods. Conversely, demand for imports will increase as foreign goods are now cheaper in relation to domestic goods. Thus, the marginal propensity to export is negative (x1<0), while the marginal propensity to import is positive (m2>0). Thus, the value (x_1 - m_2) is negative. That is, the exchange rate and savings have an inverse relationship.

b. Case of a depreciating exchange rate:

Given depreciation of the exchange rate (e), the value of currency will decline. Demand for exports will increase because the prices of the domestic goods are lower compared to foreign goods. Demand for imports will decrease because the prices of foreign goods are higher compared to domestic goods. Therefore, the marginal propensity to export is positive (x1>0) and the marginal propensity to import is negative (m2<0). Therefore, the value (x_1 - m_2) is positive. Therefore, the relationship between savings and the exchange rate becomes directly proportional.

4- Empirical Model and Data

To empirically test this relationship, we specify the following long-run logarithmic model:

$$\boldsymbol{LnSAV = \beta\_0 + \beta\_1\, LnRER + \beta\_2\, LnGDPC + \beta\_3\, LnINF + \beta\_4\, LnTB + \beta\_5\, LnM2 + \varepsilon} \dots\dots\dots\dots (\mathbf{01})$$

SAV: Gross domestic savings (% of GDP). Source: World Bank WDI.

RER: Real effective exchange rate index (2010=100). A decrease implies depreciation. Source: Bruegel Institute/Author's calculation. Source: World Bank WDI.

GDPC: GDP per capita (constant LCU). Proxy for income. Source: World Bank WDI.

INF: Inflation, GDP deflator (annual %). Source: World Bank WDI.

TB: Trade balance (% of GDP). Source: World Bank WDI.

M2: Broad money supply (% of GDP). Source: World Bank WDI.

4.1 Statistical Description of Study Variables and Correlation Matrix:

Before beginning to estimate the study model, one must first verify the characteristics of the time series and determine whether they suffer from any standardization problems that might affect the accuracy of the results. Tables (01) and (02) represent the descriptive statistics and correlation matrix for the study variables.

Table No. (01): Statistical description of the study variables

	LNSAV	LNRER	LNGDPC	LNINF	LNTB	LNM2
Mean	3.623749	4.975216	11.99320	2.074862	0.083794	7.613042
Median	3.674275	4.751978	11.98920	2.197393	0.071995	7.867480
Maximum	4.024907	6.108842	12.17262	3.985062	0.820239	10.09950
Minimum	3.005605	4.463589	11.77419	-0.156840	-0.589229	4.538378
Std. Dev.	0.267383	0.529780	0.124135	1.098846	0.357155	1.763646
Skewness	-0.595691	1.088057	-0.128589	-0.766082	0.090673	-0.169040
Kurtosis	2.580494	2.556919	1.677969	2.683090	2.337798	1.607553
Jarque-Bera	2.924860	9.041621	3.325497	4.487918	0.864230	3.764213
Probability	0.231673	0.010880	0.189617	0.106038	0.649135	0.152269
Sum	159.4450	218.9095	527.7006	91.29392	3.686928	334.9738
Sum Sq. Dev.	3.074227	12.06867	0.662604	51.92092	5.485069	133.7493
Observations	44	44	44	44	44	44

Source: Prepared by the researcher based on Eviews12 program

As we see from Table No. (01), the mean domestic saving was 2.62 having a minimum standard deviation of 0.27, with relative stability. However, the real effective exchange rate varied greatly with a standard deviation of 0.52 and a positive slope of 1.08 as represented by the skewness coefficient with intervals of skewness. It is also noted that most of the variables are at or near the normal distribution.

Table No. (02): Correlation matrix for study variables

	LNSAV	LNRER	LNGDPC	LNINF	LNTB	LNM2
LNSAV	1					
LNRER	-0,54121	1				
LNGDPC	0,59434	-0,40374	1			
LNINF	-0,12536	0,06718	-0,52457	1		
LNTB	0,66758	-0,32174	-0,07027	0,30889	1	
LNM2	0,57109	-0,87659	0,75262	-0,35311	0,12891	1

Source: Prepared by the researcher based on Eviews12 program

From Table (02), we can see that there is a moderate negative correlation between domestic savings and the real exchange rate, which is -0.54. And a strong positive correlation between domestic savings and the GDP per capita, which is 0.59, the money supply, which is 0.57, and the trade balance, which is 0.67. While for inflation, its correlation was weak and negative, which is -0.12.

4.2 Unit Root Test for Time Series:

Table No. (03): Results of the unit root test for time series using the ADF test

At Level							
		LNSAV	**LNRER**	**LNGDPC**	**LNINF**	**LNTB**	**LNM2**
With Constant	t-Statistic	-1.4548	-1.7996	-0.6657	-3.5274	-1.6882	-2.1699
	Prob.	**0.5461**	**0.3755**	**0.8443**	**0.0118**	**0.4296**	**0.2198**
With Constant & Trend	t-Statistic	-2.1036	-1.0064	-3.9374	-3.6457	-1.6737	-0.1394
	Prob.	**0.5285**	**0.9319**	**0.0205**	**0.0378**	**0.7449**	**0.9925**
Without Constant & Trend	t-Statistic	-0.0995	-1.4127	0.8924	-1.8710	-1.6490	-0.6423
	Prob.	**0.6434**	**0.1445**	**0.8973**	**0.0591**	**0.0930**	**0.4316**
At First Difference							
		d(LNSAV)	**d(LNRER)**	**d(LNGDPC)**	**d(LNINF)**	**d(LNTB)**	**d(LNM2)**
With Constant	t-Statistic	-5.3217	-2.6323	-3.9652	-5.2205	-6.1116	-4.8827
	Prob.	**0.0001**	**0.0951**	**0.0037**	**0.0001**	**0.0000**	**0.0003**
With Constant & Trend	t-Statistic	-5.2620	-3.7679	-3.9866	-5.1194	-6.0285	-5.2902
	Prob.	**0.0006**	**0.0314**	**0.0168**	**0.0009**	**0.0001**	**0.0005**
Without Constant	t-Statistic	-5.3913	-2.3521	-3.8753	-5.2993	-6.1913	-0.5123

& Trend	Prob.	0.0000	0.0198	0.0003	0.0000	0.0000	0.4871

Source: Prepared by the researcher based on Eviews12 program

The results of the time series stationarity test, as shown in Table (03), indicate that all the variables are stationary at first difference. With the exception of inflation and per capita GDP, they were stationary at the level. This enables the use of the ARDL model, which requires the variables to be stationary at the level or first difference.

4.3 Estimation of the ARDL Model:

Table No. (04): ARDL model estimation results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNSAV(-1)	0.542327	0.178436	3.039333	0.0103
LNSAV(-2)	-0.405587	0.239816	-1.691246	0.1166
LNSAV(-3)	-0.606308	0.248456	-2.440303	0.0311
LNSAV(-4)	0.503041	0.150428	3.344068	0.0058
LNRER	-0.311915	0.073155	-4.263763	0.0011
LNRER(-1)	0.216930	0.111186	1.951061	0.0748
LNRER(-2)	-0.376859	0.116085	-3.246406	0.0070
LNRER(-3)	-0.090735	0.096355	-0.941674	0.3649
LNGDPC	0.786366	0.351934	2.234414	0.0452
LNGDPC(-1)	0.843396	0.488750	1.725618	0.1100
LNGDPC(-2)	1.291367	0.541951	2.382812	0.0346
LNGDPC(-3)	-0.574664	0.506024	-1.135645	0.2783
LNINF	-0.007966	0.008782	-0.907121	0.3822
LNINF(-1)	0.011623	0.009244	1.257408	0.2325
LNINF(-2)	0.011441	0.008438	1.355872	0.2001
LNINF(-3)	-0.018428	0.007616	-2.419633	0.0323
LNINF(-4)	0.016028	0.007661	2.092112	0.0584
LNTB	0.349402	0.043582	8.017150	0.0000
LNTB(-1)	-0.321482	0.079849	-4.026112	0.0017
LNTB(-2)	0.063790	0.114862	0.555363	0.5889
LNTB(-3)	0.336398	0.112089	3.001162	0.0110
LNTB(-4)	-0.196232	0.070487	-2.783963	0.0165
LNM2	0.349626	0.151452	2.308492	0.0396
LNM2(-1)	0.122983	0.139797	0.879728	0.3963
LNM2(-2)	-0.059928	0.143738	-0.416927	0.6841
LNM2(-3)	-0.295219	0.142099	-2.077564	0.0599

LNM2(-4)	-0.275536	0.092933	-2.964882	0.0118
C	-20.92818	4.008105	-5.221464	0.0002
R-squared	**0.997405**	F-statistic		**170.7948**
Adjusted R-squared	**0.991565**	Prob(F-statistic)		**0.000000**
Durbin-Watson stat	**2.237205**			

Source: Prepared by the researcher based on Eviews12 program

The optimal ARDL model was subsequently estimated using the Akaike criterion of four maximum lags. Figure (4.3.3.4.4.4) gives the resulting model. The model was found to have high explanatory power, as the corrected coefficient of determination equaled 0.9915, which means that the independent variables explain 99.15% of the domestic savings variation. The connected probability of the Fisher statistic is less than 5%, indicating the significance of the model as a whole. Additionally, the Durbin-Watson statistic is estimated to be 2.23, which is within an acceptable range. This indicates the absence of autocorrelation in the residuals of the model. To determine the existence of a long-run relationship between the variables in question, a bound test will be carried out to test for cointegration between the variables.

4.4 Bound test:

To confirm the existence of a long-term relationship between the variables, we conducted a boundary test, and the results are shown in Table (5).

Table (5): Boundary test results

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	**9.925637**	10%	2.08	**3**
		5%	2.39	**3.38**
k	5	2.5%	2.7	**3.73**
		1%	3.06	**4.15**
Actual Sample Size	40	Finite Sample: n=40		
		10%	2.306	3.353
		5%	2.734	3.92
		1%	3.657	5.256

Source: Prepared by the researcher based on Eviews12 program

We notice from Table No. (05) that the calculated F value is (9.926) which is greater than the upper critical values at all significance levels. Therefore, we conclude that there exists a joint integration relationship between the explanatory variables and the dependent variable. The long-run model is as shown in the table below:

Table No. (06): Results of estimating long-term coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNRER	-0.582063	0.096337	-6.041934	0.0001
LNGDPC	2.427729	0.225891	10.74734	0.0000
LNINF	0.013138	0.019665	0.668094	0.5167
LNTB	0.239907	0.057372	4.181599	0.0013
LNM2	-0.163549	0.035237	-4.641343	0.0006
C	-21.65297	2.087290	-10.37372	0.0000

Source: Prepared by the researcher based on Eviews12 program

From Table No. (06), the long-term equation can be written as follows:

$$\boldsymbol{LnSAV = -21.6530 - 0.5821\ LnRER + 2.4277\ LnGDPC + 0.0131\ LnINF + 0.2399\ LnTB - 0.1635\ LnM2} \quad \ldots\ldots\ldots\ldots (\mathbf{02})$$

4.5 Error Correction Model (ECM) Estimation:

It is indicated from the boundary tests that we do have a long-run relationship, and therefore we estimate the short-run model via the error correction model (ECM) and the findings are shown in the table below:

Table No. (07): ECM Error Correction Model Estimation Results

ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNSAV(-1))	0.508854	0.100352	5.070681	0.0003
D(LNSAV(-2))	0.103267	0.120389	0.857777	0.4078
D(LNSAV(-3))	-0.503041	0.087717	-5.734811	0.0001
D(LNRER)	-0.311915	0.047904	-6.511207	0.0000
D(LNRER(-1))	0.467595	0.061366	7.619757	0.0000
D(LNRER(-2))	0.090735	0.056241	1.613337	0.1326
D(LNGDPC)	0.786366	0.223522	3.518066	0.0042
D(LNGDPC(-1))	-0.716704	0.263829	-2.716544	0.0187
D(LNGDPC(-2))	0.574664	0.225473	2.548708	0.0255
D(LNINF)	-0.007966	0.004960	-1.605983	0.1343
D(LNINF(-1))	-0.009042	0.005679	-1.592039	0.1374

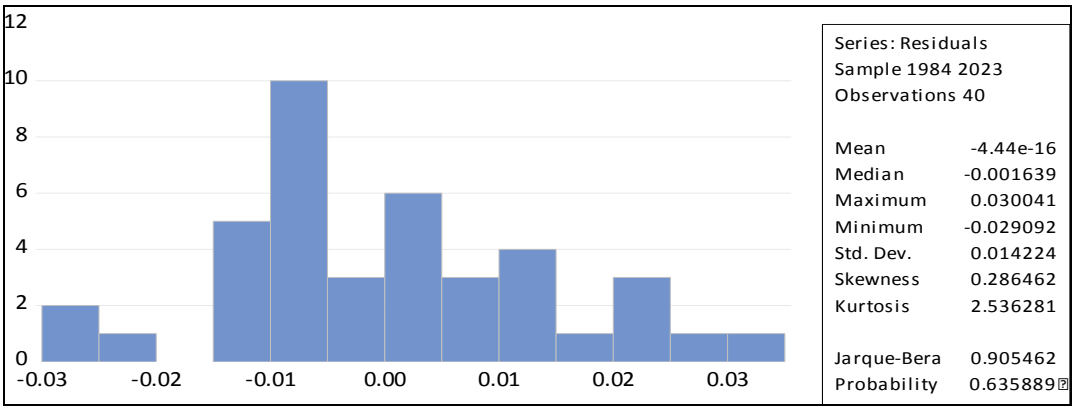
D(LNINF(-2))	0.002399	0.005208	0.460644	0.6533
D(LNINF(-3))	-0.016028	0.004706	-3.405664	0.0052
D(LNTB)	0.349402	0.023427	14.91436	0.0000
D(LNTB(-1))	-0.203956	0.049795	-4.095888	0.0015
D(LNTB(-2))	-0.140166	0.059038	-2.374182	0.0351
D(LNTB(-3))	0.196232	0.040744	4.816282	0.0004
D(LNM2)	0.349626	0.078179	4.472142	0.0008
D(LNM2(-1))	0.630683	0.094726	6.657987	0.0000
D(LNM2(-2))	0.570755	0.088447	6.453101	0.0000
D(LNM2(-3))	0.275536	0.058920	4.676435	0.0005
CointEq(-1)*	**-0.966527**	0.094676	-10.20878	**0.0000**
R-squared	**0.989098**	Mean dependent var		**0.000971**
Adjusted R-squared	**0.976378**	S.D. dependent var		**0.136224**
S.E. of regression	**0.020937**	Akaike info criterion		**-4.593132**
Sum squared resid	**0.007890**	Schwarz criterion		**-3.664248**
Log likelihood	**113.8626**	Hannan-Quinn criter.		**-4.257277**
Durbin-Watson stat	**2.237205**			

Source: Prepared by the researcher based on Eviews12 program

The error correction model (ECM) was estimated under the ARDL model (4.3.3.4.4.4). The statistical properties goodness of the model was noted. The R2 of 0.989 indicates that 98.9% of the variation in the domestic savings rate is explained by independent variables. The standard deviation of 0.0209 indicates that the model's residuals are weakly scattered. The Durbin-Watson statistic of 2.237 indicates that the residuals of the model do not experience autocorrelation issues. The error correction coefficient (CointEq(-1)) is statistically significant and negative at a significance level lower than 5% and is therefore acceptable. The result verifies a long-run relationship among the domestic savings and the rest of the variables. The coefficient suggests that 96.6% of imbalances are fixed in the following period, indicating an immediate adjustment towards equilibrium.

4.6 Model validity tests:

Figure No. (01): Results of the normal distribution test for residuals



Source: Prepared by the researcher based on Eviews12 program

Checking the normal distribution of the residuals, we get the probability corresponding to the Jarque-Bera statistic to be 0.636, which is more than 5%. Therefore, we conclude that residuals are normally distributed.

Table No. (08): Results of the autocorrelation test between the residuals

Breusch-Godfrey Serial Correlation LM Test: Null hypothesis: No serial correlation at up to 2 lags			
F-statistic	0.661387	Prob. F(2,10)	**0.5373**
Obs*R-squared	4.672968	Prob. Chi-Square(2)	**0.0967**

Source: Prepared by the researcher based on Eviews12 program

The result of the LM test was that the probability of Fisher's F statistic is estimated to be 0.5373 and Chi-Square is estimated to be 0.0967, both of which are greater than 5%; hence, we conclude that the model does not possess the problem of autocorrelation between the residuals.

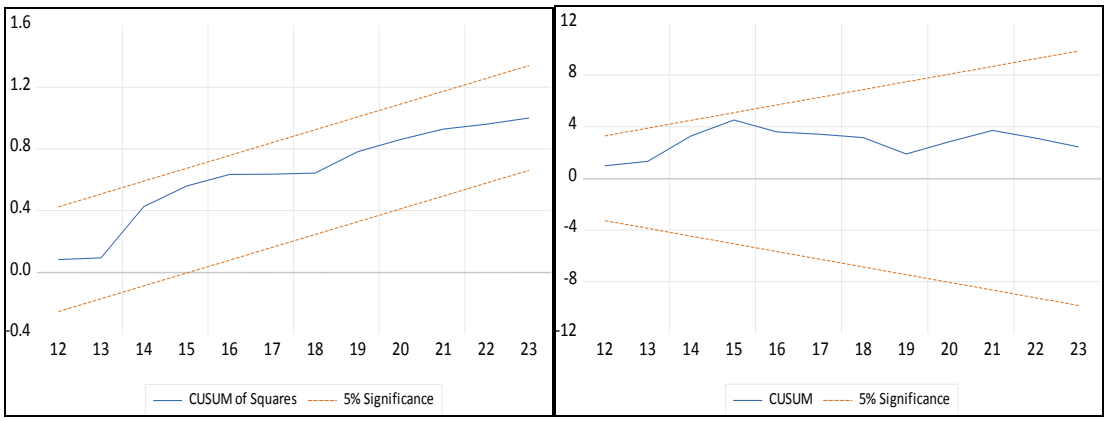
Table No. (09): Results of the variance stability test

Heteroskedasticity Test: Breusch-Pagan-Godfrey Null hypothesis: Homoskedasticity			
F-statistic	0.968178	Prob. F(27,12)	**0.5511**
Obs*R-squared	27.41505	Prob. Chi-Square(27)	**0.4416**
Scaled explained SS	1.895275	Prob. Chi-Square(27)	**1.0000**

Source: Prepared by the researcher based on Eviews12 program

The result of the heteroskedasticity test reveals that the corresponding probability but based on Fisher's statistic and Chi-Square are estimated to be 0.5511 and 0.4416, respectively, which is greater than 5%; hence, we can say that the model is free from variance invariance problem.

Figure No. (02): Results of the cumulative sum of residuals test, and the cumulative sum square of residuals



Source: Prepared by the researcher based on Eviews12 program

To determine the stability of the ARDL model coefficients during the study, both the cusum and cusum of squares tests were employed. Both tests indicated that the graph was within the 5% confidence interval. This means that the model's coefficients are structurally stable over time, and there is no sign of sudden or gradual change in the model's structure over the period of the study. Therefore, the model's estimates can be relied upon to provide a sensible economic interpretation in both the short and the long term.

4.7 Interpretation of results:

1-With an impact of -0.582, the real exchange rate has a negative and significant long-term impact on household saving; a one-percent depreciation of the domestic currency leads to a saving increase of around 0.58 percent. At the first order of magnitude, a short-term negative effect of -0,311 was found. This is explained by the fact that the falling exchange rate makes domestically exported goods more competitive, thus increasing the income and profits of the manufacturing sector. As a result, individuals and institutions can be encouraged to save rather than spend.

2-Over time, GDP per head has a significant and positive effect on household saving. A 1 percent increase in per capita income boosts household saving by about 2.42 percent, according to the 2.427 impact factor. Economic theory, which views savings as a function of income, is consistent with this. The impact was erratic in the short term; the coefficient was significant and positive at 0.786 in the first meeting, but it became negative in the second meeting. This shows the unpredictable savings response to shocks or changes in consumer spending.

3- In the long run, inflation has had little effect, indicating that there is no consistent price-savings relationship. In the short run, the coefficient of -0.0160 showed how inflation, at least temporarily, can destroy people's ability to save, as it reduces the purchasing power of money and encourages consumption rather than saving.

4-Trade balance showed a significant positive long-term impact with a coefficient of 0.239. As it reflects both an increase in foreign-exchange inflows and an evolution of productive capacity, it shows that any improvement in the trade balance (increase in exports or decline in imports) will lead to a large domestic saving. The assumption that trade balances generate excess funds that support domestic savings in the short run was confirmed by the coefficient of 0.349 for the first difference.

5- In the long run, the money supply had a negative and large impact, with a coefficient of -0.1635. This means that a 1 percent increase in the money supply will result in a savings decline of about 0.16 percent. This is explained by higher consumption or inflation due to the growth of money. Conversely, the short-term effect was positive during this period, at 0.349, with a peak of 0.630. This means that the availability of liquidity temporarily supports saving, before its effects are offset by changes in prices or consumption habits.

5. Conclusion and Policy Implications

The purpose of the study was to measure the impact of real exchange rate fluctuations on the savings rate in Algeria over the period (1980-2023) using an automatic distributed error model (ARDM). The results showed that the real exchange rate and domestic savings are negatively correlated in the short and long term. This means that

the depreciation of the Algerian dinar has been responsible for raising the level of domestic savings, increasing demand for domestic production and reducing demand for foreign production. The findings thus demonstrate the validity of the hypothesis that the real exchange rate depreciation will lead to higher domestic savings levels in Algeria.

The study provides empirical evidence for policymakers to consider a more stable exchange rate policy and to link it to structural reforms that support domestic savings, as this is a key element for financing investment and raising economic growth. Research also contributes to the depth of the local economic literature by providing insight into the dynamic relationship between macroeconomic variables and saving, thus improving the effectiveness of economic policies in the context of financial instability. From what we found.

Policy Recommendations:

- Increased confidence in the banking and financial system by providing better real returns on savings and encouraging saving to be used for productive investment.
- Adoption of exchange rate stability and inflation control policies.
- Diversification of sources of national income and reduced dependency on hydrocarbons to support the trade balance.
- Controlling the supply of money and directing monetary growth into investment rather than consumption.

The authors express their sincere appreciation to the **University of Ain Temouchent** and the **University Mustapha Stambouli of Mascara** for their academic and institutional support in the completion of this research. Special thanks are also extended to the **Bank of Algeria**, the **National Office of Statistics**, and the **Ministry of Finance** for providing access to the macroeconomic data used in this study. The authors gratefully acknowledge the constructive feedback and valuable suggestions provided by anonymous reviewers and the editorial board of *Science, Education and Innovations in the Context of Modern Problems*, which significantly improved the quality of this paper.

This research **did not receive any specific grant** from funding agencies in the public, commercial, or not-for-profit sectors. The study was conducted as part of the authors' independent academic work within their respective universities.

The authors declare that they have **no known competing financial interests or personal relationships** that could have appeared to influence the work reported in this paper. All opinions, analyses, and conclusions expressed in this article are solely those of the authors and do not necessarily represent the official positions of their affiliated institutions.

References

1. Alexander, R. (1998). Advanced macroeconomics. *Economic Record, 74(224), 89.*

2. Bresser, P., Luiz, C., Eliane, A., & Paulo, G. (2014). An empirical study of the substitution of foreign for domestic savings in Brazil. *Economia, 15* (1), 54-67.

3. Chiu, Y., & Chia-Hung, D. (2016). The role of savings rate in exchange rate and trade imbalance nexus: Cross-countries evidence. *Economic Modelling, 52*, 1017-1025.

4. Elhendawy, E. (2025). Exchange Rate and Gross Domestic Saving Is There a Relation? Empirical Evidence from Egypt. *International journal of Economics and finance, 17* (1), 1-1.

5. Gala, P., & Marcos, R. (2009). Real exchange rates, domestic and foreign savings: the missing link. *XXXVII Encontro Nacional de Economia da ANPEC.* Foz do Iguaçu Brazil.

6. Helpman, E., & Razin, A. (1984). The role of saving and investment in exchange rate determination under alternative monetary mechanisms. *Journal of Monetary Economics, 13(3), 307-325.*

7. Moataz, a. A. (2025). The Relationship Between the Exchange Rate and the Balance of Payments Using Nonlinear. *Journal of Quantitative Economic Studies Volume: 11, Issue: 01 , pp. 103-11* , 105.

8. Montiel, P., & Luis, S. (2008). *Real exchange retes, saving and growth: Is there a link?* Working Paper No. 4636, The World Bank.

9. Mushir, &. A.-W. (2021). TThe economic determinants of saving Algerian household at the Period (1987-2019). *Horizons for Economic Studies* , Volume 6, Numéro 2, Pages 248-266.

10. Nasir, M., Ahmad, F., & Ahmad, M. (2017). Foreign direct investment, aggregate demand conditions and exchange rate nexus: A panel data analysis of BRICS economies. *Global Economy Journal, 17(1), 20160012.*

11. Razmi, A., Rapetti, M., & Skott, P. (2012). The real exchange rate and economic development. *Structural change and economic dynamics, 23(2), 151-169.*

12. Senturk, I., & Ali, A. (2021). Effectiveness of Monetary Policy Channels: Insights from Four Emerging Economies. .*Journal of Business and Economic Options, 4(3), 1-9.*

13. Turner, P. (1988). Savings and investment, exchange rates, and international imbalances: A comparison of the United States, Japan, and Germany. *Journal of the Japanese and International Economies, 2* (3), 159-285.

14. Umoru, d., & Oluwatoyin Dorcas, T. (2023). Saving in presence of volatilities in interest rate and exchange rate devaluation. *Asian Journal of Economics, business and Accounting, 23* (2), 111-128.

International Meetings and Journals Research Association
Science, Education and Innovations in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Poetics of Narrative Configuration: Reconsidering Mahmoud Darwish's Mural as a Modern Aesthetic Dialogue between Life, Death, and Poetic Form

Samira Hafsi
Dr.
Emir Abdelkader University of Islamic Sciences
Constantine, Algeria
E-mail: nadiasamira1998@gmail.com

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Configurational Poem; Narrative Poetics; Mahmoud Darwish; Visual Imagination; Intergeneric Dialogue; Modern Arabic Poetry; Symbolism of Color; Palestinian Identity; Aesthetic Modernity; Lyric-Narrative Convergence

Abstract
This paper undertakes a critical re-examination of the narrative and configurational poetics in Mahmoud Darwish's long poem Mural, a work that exemplifies the convergence of lyricism, narrative, and visual imagination. The study explores how Darwish's poetic discourse embodies a multilayered field of signification, where aesthetic form becomes a site of resistance, memory, and metaphysical contemplation. Through the interplay between the lyrical self and narrative fragments, Mural constructs an intricate web of voices that disrupts traditional poetic boundaries. The poem's fluidity reveals a modernist vision where fragmentation and dialogism express existential tensions between life and death, identity and exile, presence and absence. By employing a configurational approach, this research interprets Darwish's poetic text as an evolving visual and narrative canvas. The study investigates the symbolic and chromatic dimensions—particularly the recurrence of the color green—as metaphors of renewal and spiritual transcendence within the Palestinian struggle. Moreover, the paper analyzes Mural as a transgeneric artwork that merges painting, music, and theater within its poetic syntax, thereby transforming Darwish's text into a dynamic field of interartistic communication. Ultimately, the study situates Mural within the broader context of modern Arabic poetics, emphasizing its aesthetic innovation and cultural depth as an emblem of the Palestinian consciousness and its enduring defiance against Zionist oppression.

Citation. Samira H. (2025). The Poetics of Narrative Configuration: Reconsidering Mahmoud Darwish's Mural as a Modern Aesthetic Dialogue between Life, Death, and Poetic Form. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1183–1194. https://doi.org/10.56334/sei/8.11.97

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 10.03.2025 | Accepted: 01.06.2025 | Publishing time: 10.10.2025

1. Introduction

In Mahmoud Darwish's *Mural*, we encounter a distinctive literary practice that embodies the spirit of modernity in Arabic poetry. The poem transcends the limitations of conventional genre boundaries by weaving together dramatic,

epic, and visual-plastic modes of expression. One of the defining features of this evolution in literary art is the gradual dissolution of the rigid barriers that traditionally separated genres, thereby facilitating the migration of artistic techniques from one domain to another.

Darwish's linguistic configuration in *Mural* penetrates deeply into the poetic body, destabilizing its pattern and giving rise to a complex network of voices and narrative fragments. Through this transformation, the poem evolves into a dynamic structure where dialogue, dramatic tension, and the poetic voice merge in a fluid interplay of meaning. The polyphonic nature of *Mural*—with its scattering of dialogues and secondary figures—adds dramatic density to the lyrical landscape, foregrounding the dialectics between creation and mortality, exile and belonging, silence and articulation.

This study unfolds across three interrelated axes. The first part examines the **configurational poem**, a concept that illuminates the aesthetic convergence between painting and poetry. The second part interprets the **symbolic and chromatic dimensions** of color—especially the omnipresent "green" that symbolizes rebirth and divine vitality within the Palestinian consciousness. The third part explores the **narrative configuration** of the poem and its representation of the struggle between life and death through the metaphors of earth and clay, revealing Darwish's lyrical inscription of the homeland in both existential and artistic terms.

2. The Configurational Poem

The concept of *configuration*, with its multilayered theoretical implications, constitutes one of the essential components in shaping literary discourse. No critical study can fully grasp the power of poetic language without delving into this dimension of form and meaning. Configuration serves as a field for observing and analyzing how artistic language achieves aesthetic effectiveness through interaction with other expressive systems.

The interweaving of poetry and visual art in Darwish's *Mural* gives rise to a new aesthetic paradigm grounded in the imaginative reconstruction of perception. In this way, new writing becomes simultaneously poetic, narrative, and theatrical, incorporating techniques from painting, music, sculpture, and cinema. This interartistic openness reveals Darwish's persistent drive toward modernity—his refusal to be confined by the representational and his aspiration to make poetry a living canvas of visual and emotional resonance.

As critics such as Park (drawing on Baudelaire) have argued, poetry and painting share a visual impulse, uniting the speaking word and the silent image. Darwish's *Mural* embodies this union through its vivid imagery, symbolic chromaticism, and rhythmic structure. The poem thus becomes a painted mural of existential vision—an inscription of the Palestinian experience through narrative rhythm, symbolic color, and spiritual transcendence.

Ethical Considerations

This study adheres to the principles of academic integrity and ethical scholarship. All sources cited have been properly acknowledged, and the interpretations presented are original and grounded in scholarly methodology. No human or animal subjects were involved in this research.

The Chromatic Poetics of White and Red in Mahmoud Darwish's *Mural*

The colour **white** in Mahmoud Darwish's *Mural* constitutes not merely a visual or aesthetic element, but a **distinctive psychological and ontological mood**, one that interacts profoundly with the poem's linguistic fabric. Darwish demonstrates an acute awareness of the **keys to visual perception**, mobilising creative sensibility as a vehicle through which colour transcends mere chromatic value to embody the psychic tension, spiritual anxiety, and suppressed desire that haunt the poetic self.

"...And I fly. I shall be that which I shall become
in the final orbit.
Moreover, all is white,
the sea suspended from the ceiling of a white cloud.
Moreover, nothingness is white in the absolute white sky.
I was, and I was not. Alone am I
in the precincts of this white eternity. I came before my appointed hour,
yet not a single angel appeared to me to say:
'What have you done there, in the world?'
Nor did I hear the cries of the righteous, nor
the groans of the sinners. Alone am I in whiteness,
alone am I..."

This passage reveals how **whiteness dissolves the opaque layers** enshrouding the poem's language. It becomes a chromatic field of *psychic transfiguration*, expressing the self's passage through death as an act of transcendence and voluntary surrender. White, in Darwish's symbolic lexicon, is not a neutral or innocent hue. It **embodies terror and metaphysical awe**, a trembling before the abyss of self-awareness. Whiteness expands not through radiance that excludes all colour, but through its **ambiguity and negation**—its capacity to evoke both **presence and absence**, **light and void**.

Darwish's poetic universe thus situates white as an **absolute field of being**, encompassing the colours of air, sky, and sea, all suspended in an ethereal cosmological rhythm. The poet transforms this chromatic neutrality into an expressive fabric for existential questioning. In this context, white becomes a **spiritual texture**, a mirror of the soul's lacerations, associated with death, shroud, and the infinite silence of the divine. As a **visual metaphor**, whiteness embodies absence—the "visible invisibility" that contains all potentialities of colour. It is both the sum and the negation of all hues, a paradox that produces what Gaston Bachelard termed *le silence lumineux*—a luminous silence brimming with meaning.

Philosophically, if we consider the speculative reflections of natural philosophers, **all earthly pigments appear as deceptive artifices**, mere masks imposed upon the true nature of matter. Within this symbolic logic, white emerges as the **pure origin of light**, the **source of all chromatic existence** and the *ultimate spiritual principle* through which the self seeks its final illumination.

"Whence does poeticity arise?
From the intelligence of the heart, or from the instinct of humankind?
From the instinct of sensing the unknown? Or from a red rose
in the desert? Neither is the personal mine,
Nor is the universal mine.
Poeticity dwells in the white darkness of linen.
I did not know entirely who I was within us or who my dream was.
I am my dream,
as if I were, and as if I were not."

Within these verses, the **"white darkness of linen"** becomes a metaphor for poetic genesis—a threshold where meaning is both concealed and revealed. Poeticity, in Darwish's vision, resides in the **paradoxical space between illumination and obscurity**, between the purity of vision and the fragility of human mortality.

The poem's chromatic trajectory then **shifts from white to red**, marking a new phase of emotional and existential intensity. The **colour red** detonates a surge of metaphysical interrogation. It evokes life, blood, desire, and rebellion—the pulse of vitality against the stillness of death. Red, in this sense, operates as both **eros and thanatos**, a site of collision between creation and dissolution. It propels the reader into a sensorial realm where Darwish explores the recesses of human consciousness and the **psychic sedimentations** of exile and resistance.

This transition from white to red symbolises a **movement from transcendental silence to embodied passion**. The crimson hue, sovereign among colours, bears within it the rose of pride and pain—an emblem of the poet's wandering spirit in the desert of memory. "For red," Darwish suggests, "permeates the soul with its force, the colour of life, of every pulse and anxiety, the very blood of fervour, tumult, and violence." The poetics of diction in *Mural* fuses with the **radiance of crimson**, where emotional saturation meets symbolic density.

Here, the **crimson light merges with the yellows of desert sands**, an image of impermanence where the rose blooms, withers, and sinks into oblivion. Through this chromatic symphony, Darwish celebrates the *mute eloquence* of colour—the way suggestion and silence, hue and emotion, converge into one expressive act. The red in *Mural* thus becomes a language of revelation and concealment, translating anguish into form and silence into vision.

In this interplay between the white of eternity and the red of passion, Darwish constructs a **poetic ontology of colour**, where light and darkness, life and death, are no longer opposites but **mutually reflective conditions** of being. Through this aesthetic synthesis, painting and poetry merge into one field of transcendence. As Darwish himself declared,

"Painting liberates us from the noise of expression into silence."

In this liberation lies the essence of *Mural*—a work that surpasses linguistic confinement, transforming poetry into a **visual metaphysics**, a mural of life, death, and the eternal return of light.

The Poetics of Green and the Narrative Configuration in Mahmoud Darwish's *Mural*

"Green, the land of my poem is green, lofty ...
I record it slowly, slowly,
to the rhythm of seagulls in the Book of Water, I write it,
bequeathing it to those who ask: for whom do we sing
When does salinity scatter in the dew?"

The **chromatic presence of green** permeates the pictorial expanse of *Mural*, unfolding as a dominant resonance that integrates the symbolic, emotional, and spiritual registers of Darwish's poetic vision. Distilled from the blending of **yellow and blue**, green encapsulates both terrestrial fertility and celestial vastness. Through this **chromatic orchestration**, Darwish configures a poetic space that stretches upward toward luminous heights, charged with affective energy and natural rhythm. The freshness of this tone, suspended between earth and sky, evokes both **continuity and renewal**, positioning the poem as a landscape where **language, colour, and rhythm converge** in aesthetic unity.

Within this vast visual field, Darwish weaves a dialogue between **poetry and painting**, where the craft of metaphor becomes inseparable from the migration of meaning across linguistic and pictorial registers. The *Mural* thus evolves as an **inter-artistic discourse**, in which the painter's brush and the poet's pen collaborate to capture semiotic fragments of the human and the divine. The **language of pigments, colours, and forms** becomes a new syntax, one through which the image achieves sensual and intellectual integration.

The utterance of *Mural* arises from the **fusion of inscription and depiction**—the written word and the painted gesture. This interplay of **colour's heat and language's rhythm** generates a movement between the *self* and the *non-self*, between the tangible and the abstract. In this fusion, **green functions as the emblem of peace, openness, and endurance**. Its cool luminosity resists the blaze of destruction, suggesting the persistence of life amid the ashes of war. Darwish situates green within the "Book of Water," the fluid register of origins, posing a metaphysical question: *does water possess colour?* His reflection implies that water, like poetic language, **absorbs the hues of its surroundings**, reflecting multiplicity without altering its essential purity.

"Its appearance differs according to the vessel containing it, the soil beneath it, and that which reflects upon it... water has no inherent colour; it assumes the hue of what surrounds and reflects upon it... for one sees the sea black, yet when scooping a handful, finds it as clear as shallow water."

This reflection on water mirrors Darwish's **poetic epistemology**, where meaning, like colour, is contingent and relational. *Mural* thus becomes a field of luminous interaction in which the visible world and linguistic imagination coalesce. The green of the poem—"the land of my poem is green"—is not merely descriptive but ontological: it embodies the vitality of Palestine, a **symbolic homeland of memory and resurrection**.

Green, as the poet declares elsewhere, is written "upon the prose of the ears of wheat," inscribed into the cyclical temporality of sowing, decay, and rebirth:

"Green I write it upon the prose of the ears of wheat,
the book of the field, arched by a pallid fullness
within it and within me... I am the grain of wheat
that died to turn green again. And in my death lies a life."

This recurrence of green signifies the **rhythmic pulse of regeneration**, intertwining **lyrical tone and musical resonance**. In *Mural*, colour and sound move in synchrony toward the truth of existence, the **crater of being**, where the Palestinian subject affirms identity through continuity and renewal. The poem's fragmentation and self-dispersal transform into eternal echoes of fertility emanating from the green earth—a metaphor for both the **land and the poem** as indestructible repositories of life.

Darwish's creative synthesis echoes the classical dictum that *"painting is silent poetry, and poetry is invisible painting."* Both arts imitate nature not through replication but through **moral and emotional intensification**, attaining a transcendence that fuses perception and imagination. Colour, in this sense, becomes a **thinking art**—a vehicle for consciousness itself. Darwish's sensitivity to colour reflects his belief in its **existential potency**, as it carries the density of signifiers and embodies the **aesthetic manifestation of being**.

Throughout history, colour has fascinated humanity for its capacity to mediate between **sensation and meaning**. In *Mural*, chromatic expression deepens the emotional field of the text, transforming the accumulated pain of **Palestinian memory** into a palette of resistance, hope, and remembrance. The poem's "green" therefore operates simultaneously as **a natural, spiritual, and political signifier**—a chromatic metaphor of homeland and immortality. Within Islamic culture, as Darwish subtly invokes, green also symbolises **paradise and sanctity**; the shrines of saints draped in green embody eternal life "in gardens beneath which rivers flow."

Darwish's mastery lies in the **fusion of poetic rhythm with chromatic harmony**. Through rhyme, cadence, and repetition, he sketches the **dialogue between the spoken and the unspoken**, where sound and colour resonate to articulate the ineffable. This luminous aesthetic energy, rising through the verses of *Mural*, transforms the poetic act into an act of **spiritual resistance** against the occupation that stripped him of his homeland—the very *"green land of his poem."*

The fusion of the **pen's opacity and colour's transparency** gives rise to a unique *chromatic poetics*, in which word and pigment compose figurative rhymes. These rhymes, as Darwish suggests, "echo and complement one another, generating harmony through affinity of shape, space, and symbol." Through such resonance, the poet constructs a **visual-musical symphony**, an aesthetic bridge uniting the **majesty of painting** and the **grandeur of poetry** within a shared search for truth.

The Poetics of Narrative Configuration

In *Mural*, the **poetic field expands beyond lyricism** to embrace **narrative mechanisms**, through which Darwish reconfigures the spatial and temporal dimensions of verse. Poetry becomes a **hybrid art**, a site where visual, musical, and narrative energies converge. The incorporation of dialogue, monologue, and fragmented storytelling **breaches the structural boundaries of poetic discourse**, enabling a dynamic interplay between **figuration and narration**.

The inclusion of narrative discourse serves multiple aesthetic and ideological functions. It reflects the poet's **stance toward reality**, allowing him to reimagine experience through the **syntax of temporality and sequence**. Darwish employs narrative techniques—**characterisation, event progression, and spatial delineation**—not to construct a story but to **intensify poetic revelation**. These narrative incursions, found throughout his oeuvre in works such as *Sarhan Drinking Coffee in the Cafeteria*, *What Was Will Be*, *Ahmad al-Za'tar*, and *The Land*, reaffirm his ongoing attempt to reconcile **the lyrical "I" with the collective "we"**.

Thus, *Mural* emerges as a **narrative poem of self-and-nation**, where colour, sound, and voice intertwine to configure a **poetics of memory and transformation**. The poem becomes both **a mural of existence** and **a testimony of being**, where Darwish's aesthetic innovation mirrors the perpetual struggle of the Palestinian consciousness—its yearning for wholeness amid fragmentation, for harmony amid exile.

The Narrative Green: Lyrical Movement and Fragmented Time in Mahmoud Darwish's *Mural*

"Green, the land of my poem is green,
carried by the singers from time to time, as it is in its fertility.
From it, I have: the contemplation of a narcissus in the water of its image;
from it, I have the clarity of shadows in synonyms;
and from it I have: the resemblance in the words of the prophets
upon the surfaces of the night."

In this lyrical passage, Darwish configures the **radiance of the green poem** as a sculptural vision—an edifice of renewal that breathes through the cosmic vastness of sky and air. The *green* here assumes both a **material and metaphysical presence**, sculpted from the continuity of nature yet animated by the language of transcendence. Its texture is tender yet eternal, carried "by the singers from time to time," a symbol of **collective endurance**. Green glimmers across darkness as "a sudden shimmer upon a black cloud illuminated by the sun," affirming an aesthetic of **hope and regeneration amid ruin**. The narcissus flower—floating in the reflective water—embodies harmony, while "the clarity of shadows in synonyms" evokes the *musical symmetry* between the seen and the said, between poetic diction and its echo.

Darwish's *Mural* thus collapses the boundaries between **lyric and narrative**, achieving what may be termed a *configurational unity*. The lyrical movement fuses with narrative sequences in a fluid continuum—at times so intertwined that distinction becomes impossible, at others separating momentarily to reveal their dialogic duality. This **alternation of fusion and separation** articulates the poet's intentionality: meaning arises through tension, through a dynamic background that resists the stability of fixed interpretation. As Bakhtin's notion of dialogism suggests, such *polyphonic layering* complicates the trajectory of discourse, defying objectivity and closure.

Fragmentation and the Polyphony of Voices

"I saw my French doctor
open my cell and strike me with a cane.
I saw my father returning
from pilgrimage, unconscious,

stricken by a Hijazi sunstroke.
Put me out!..."

"I saw René Char sitting with Heidegger;
The dialogue was a ray."

These fragmentary visions constitute **cinematic flashes** within the text's narrative field, moments of revelation scattered across a landscape of broken memory. *Mural* operates as a **linguistic migration**, employing techniques of rupture, omission, and fragmentation that dissolve traditional narrative linearity. The story flows "like a river from which broken passages pour," moving beyond causality and sequence to evoke a **spiral temporality**—a whirlpool of overlapping scenes, images, and voices.

The poem's **primary narrative**—the existential dialectic of *life and death*—multiplies into numerous subnarratives, producing a mosaic of reflections that mirror the fractured consciousness of the poet. The result is what may be described as a *centrifugal narrative structure*: events and characters emerge and vanish, appearing as spectral fragments, "flashes resembling cinematic shots within a continuously running but incomplete filmstrip." The text advances without resolution; its **movement is ceaseless but non-teleological**, mirroring the **condition of exile and incompleteness** that defines the Palestinian experience and the human condition at large.

Temporal Dissolution and the Hallucinatory Narrative

The **semantic reservoir** of these narrative fragments accumulates around the fertile symbol of *Mural* itself—a repository of moist memories and fluid meanings. Between the *living present* and the *pliant past*, Darwish constructs a shifting field where **time dissolves and reality bends** into dreamlike distortions. The narrative becomes **hallucinatory**, unbound by logic or chronology. Two threads intertwine within this field: one external, linked to **spatial displacement** and worldly experience; the other internal, resounding within **consciousness** as metaphysical reverie.

Through this interplay, Darwish liberates the narrative from realism, reorienting it toward **imaginary and spiritual dimensions** where meaning is constructed according to desire rather than law. The poetic voice thus traverses the boundaries of the self, oscillating between **material imprisonment and metaphysical freedom**. In this sense, *Mural* anticipates postmodern narrative aesthetics, where **fragmentation, multiplicity, and discontinuity** become strategies of self-articulation in the face of existential uncertainty.

The Lyrical Narrative as Human Testament

Darwish employs **lyrical narration** to confront the **crisis of contemporary humanity**, the loss of meaning amid perpetual conflict. The scattered impressions, voices, and glimpses within *Mural*—though seemingly disparate—are **meticulously interwoven** into a coherent aesthetic design. Beneath their surface diversity lies an architectural unity, sustained by the rhythm of repetition and the gravitational pull of the poet's vision.

"I saw al-Maʿarrī expelling his critics from his poem:
I am not blind to see what you see,
for insight is a light leading
to nothingness... or madness."

In invoking classical voices such as **Abū al-ʿAlāʾ al-Maʿarrī**, Darwish situates his poem within the continuum of **Arab intellectual history**, transforming personal suffering into a universal dialogue on the nature of insight, mortality, and artistic truth. Similarly, in another passage:

"I saw lands embracing me with morning hands:
be worthy of the scent of bread. Be
fit with the flowers of the pavement,
for your mother's oven still burns,
and the greeting is warm as fresh bread!"

The imagery of bread, earth, and maternal warmth collapses the distance between **homeland and body**, **memory and survival**. Through such narrative moments, Darwish articulates a **poetics of return**, where the act of writing itself becomes a ritual of resurrection.

Death as Dialogue and Revelation

Mural unfolds as a **dialogue with death**, not as negation but as continuity. Death becomes a **character**, a listener, and a companion—a mirror to the poet's meditation on existence.

"Oh, death, wait for me outside the earth,
Wait for me in your land until I finish
a passing conversation with what remains of life
near your tent; wait for me until I finish existence."

This conversation with death signifies the **culmination of Darwish's existential poetics**, a synthesis of faith and rebellion, despair and affirmation. The poet's allusion to Ṭarfah ibn al-ʿAbd and existentialist thinkers such as Heidegger underscores his intellectual hybridity: the ancient Arabic ode and modern European philosophy converge within the same discursive space. The poet stands at the threshold between **pre-Islamic fatalism and modern metaphysical anxiety**, transforming both into aesthetic meditation.

The **autobiographical resonance** of this dialogue is unmistakable. Composed after his cardiac surgery, *Mural* is both an **elegy and an act of defiance**. Between anaesthetic delirium and creative lucidity, Darwish reclaims authorship over his mortality. The blank page becomes a **metaphysical canvas**—a white space that absorbs pain and converts it into fertility. Through writing, he bestows life upon the "dense earth," transforming his physical suffering into an **epic of beauty and endurance**.

His language migrates toward the **repositories of nature**, drawing from the inexhaustible sources of **philosophical, mystical, and poetic contemplation**. The poem becomes a sanctuary where **death is aestheticised**, a spiritual phenomenon through which the poet contemplates the possibility of eternal renewal. The reader, in traversing this configurational landscape, perceives not merely a personal confession but a **universal meditation on existence**.

Darwish's *Mural* thus stands as an **aesthetic testament of modern Arabic poetics**—a work where the lyrical and narrative, the visual and metaphysical, the historical and existential, all converge into one profound act of creation. The poem does not end in death but **in the breath of meaning**, a resurrection through language that transcends the limits of body and time.

The Metaphysics of Death and Rebirth in Darwish's *Mural*

The climactic scenes of *Mural* reach a transcendent synthesis where death and life no longer stand as opposites but as **interdependent movements within the cosmic order**. To convey the significance of this existential moment, Darwish entreats death to **grant him the majesty of final awareness**, to postpone annihilation long enough for him to complete the act of poetic articulation. Death becomes a **dialogical interlocutor**, not an enemy but a partner in the creative voyage: a "sea voyage aboard a ship" through the turbulence of being.

The poet imagines himself **sailing through the storm**, accompanied by the cries of the dead and the fragile flutter of a bird beneath the tempestuous sky. The flood that drowns the ship evokes not only catastrophe but also **purification**—a symbolic immersion through which the self attains renewal. The survivors who "swim away in the sea as if defying death" embody the poet's faith in **art as resurrection**. The scene is reconstructed as a process of **metamorphosis and fusion**: the human subject, rooted in the "scent of the ancient earth," confronts both the horror and the sublimity of extinction. This confrontation yields a new metaphysical insight—the **resurrection of annihilation**, wherein existence reveals itself as continuity within transformation.

At the centre of this cosmic vision stands **Palestine**, both *origin and telos*, the axis upon which life, death, and memory converge. It is the **sacred geography of rebirth**, "a tale recited upon the wings of the cosmos," where the truth of existence refuses concealment in tombs. In this philosophical frame, Darwish's invocation—"*My hope in you, O death, is to make a truce in your land...*"—illustrates a profound dialectic: a **truce with mortality** that paradoxically affirms life. Here, Darwish reconciles **the metaphysical with the political**, merging existential freedom with national destiny.

For Darwish, **existence equals freedom**, and freedom signifies the **realisation of possibility**. The poet's self-consciousness becomes an *act of choice*, an assertion of individuality amid historical erasure. In this sense, freedom is not mere resistance but an **ontological awakening**, the awareness of the self as both finite and infinite—"belonging to and embodiment of the 'I' in its individual form as consciousness and intention."

The Classical Elements and the Semiotics of Being

The triad of **fire, water, and earth**—three of the four primordial elements of pre-Socratic philosophy—serves as the **metaphorical foundation of Darwish's cosmology**. Each element functions as a **semiotic node**, generating rhythm, symbol, and meaning within the text's architecture. These natural elements, recurrent throughout *Mural*, construct a **poetic ecology** in which life and death interpenetrate, as they have since the earliest mythopoetic imaginings of humankind.

In this schema, **fire** becomes the flame of consciousness and passion; **water**, the medium of purification and transformation; **earth**, the embodiment of origin and permanence. The poet's invocation—*"You have been defeated, death, by all the arts"*—transforms these substances into **signifiers of transcendence**. Through "the clay of humanity," Darwish asserts the **creative victory of art over mortality**: a continuity that defies decay through the permanence of inscription.

"You have been defeated, death, by the songs in the land of the Two Rivers,
by the Egyptian obelisk, the tomb of the pharaohs,
The inscriptions on the stones of a temple have defeated you
Moreover, they have triumphed, and immortality has escaped from their traps."

Here, Darwish reclaims the legacy of ancient civilizations, integrating Mesopotamian, Egyptian, and Palestinian memory into a single **continuum of human creativity**. Through art, inscription, and monumentality, humankind transcends the contingency of death. The *Mural* becomes both an **epitaph and a resurrection**, an aesthetic defiance of oblivion.

The recurrent imagery of **clay, stone, and temple** crystallises into an **iconic image of Palestine**: a land both wounded and sacred, whose soil retains the trace of divine breath. The ascending rhythm of the language, embroidered with fragments of invocation and resistance, transforms the earth itself into a **scriptural medium**. This ascending structure intensifies the **"stimulation of signifiers"**, affirming fragmentation as an act of creative rebellion—a "meteor-like eruption" that disperses images across the page, producing a mosaic of sanctity and pain.

Longing, Transcendence, and the Aesthetics of Danger

Through the echo of "*You have been defeated*," Darwish's text articulates a **chorus of voices** rising from the genetic depths of the earth. Death, paradoxically, becomes an impetus for **human transcendence**, calling upon humankind to "exert effort to transcend its natural condition." This effort is expressed through *longing*—the desire for **adventure, heroism, and love**, all of which carry the risk of destruction.

In *Mural*, **the encounter with death becomes an aesthetic adventure**, a dangerous passage through which the poet redefines greatness as *the courage to imagine beyond mortality*. The danger inherent in facing death transforms into the very condition of artistic creation. Thus, Darwish's longing is both **erotic and ontological**—a yearning for beauty that coincides with a yearning for freedom, the essence of being itself.

Conclusion: Toward a Poetics of Configuration and Freedom

This research has sought to illuminate the **interrelation between poetry, narrative art, and visual imagination** in Mahmoud Darwish's *Mural*. The poem functions as a **hybrid aesthetic structure**, where lyrical intensity converges with narrative progression, and visual imagery merges with philosophical meditation. Through this interweaving, Darwish constructs a **poetics of configuration**—a mode in which painting, music, and storytelling coexist as manifestations of one creative consciousness.

The findings of this study reveal that Darwish's work operates on multiple levels—**semiotic, aesthetic, and metaphysical**—each reinforcing the other in a unified artistic vision:

1. The **integration of visual art** within the poem reflects Darwish's cosmic discourse, addressing the existential condition of the Palestinian subject, whose erasure is resisted through **aesthetic multiplicity and polyphony**.
2. The **fusion of poetic and narrative modes** reveals a complex semiotic architecture that transforms meaning through rhythm, fragmentation, and recurrence.
3. The **lyrical "I" dissolves** into a narrative consciousness that transcends the personal, speaking instead from a collective memory inscribed in the language of exile and return.
4. The **migration of painting into the architecture of poetry** represents a distinctly modernist strategy that contracts time and expands spatial imagination, situating *Mural* within the aesthetics of global modernism.
5. The **dialogical interplay of colour**, particularly the symbolism of white, red, and green, exposes the emotional and philosophical depth of the self, reflecting Darwish's engagement with the **visual grammar of modern art**.
6. The **dialectical experience of life and death**, dramatized through narrative form and chromatic imagery, transforms suffering into an instrument of revelation and meaning.
7. The **poetic language itself** becomes a pictorial act—a brushstroke of consciousness that merges the symbolic with the material, the local with the universal.
8. The **text's open temporality** invites the reader to participate in its completion, transforming interpretation into a creative act of co-authorship.

Ultimately, *Mural* emerges as **a philosophical epic of existence**, an open text inscribed upon the threshold between mortality and immortality, history and dream, matter and spirit. Through a luminous interplay of word and image, Darwish transforms the inevitability of death into an affirmation of life's aesthetic permanence.

In this way, *Mural* achieves what may be called the **freedom of poetic being**—a liberation through art that transcends the boundaries of nation, body, and time. Darwish's final poem thus stands not as an elegy but as an **eternal mural of human consciousness**, painted upon the sky of language, where the poet continues to live, to breathe, and to sing beyond the reach of silence.

Acknowledgment

The author expresses deep gratitude to the Faculty of Arabic Literature at Emir Abdelkader University of Islamic Sciences for its academic support and to colleagues who offered valuable insights during the preparation of this study. The author also acknowledges the inspiring legacy of Mahmoud Darwish, whose poetic vision continues to enrich global literary discourse.

Funding

This research received **no specific grant** from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of Interest

The author declares **no conflict of interest** related to this publication.

References

1. Al-Jāḥiẓ. (1945). *Al-Ḥayawān* [The Animal]. (ʿAbd al-Salām Hārūn, Ed.). Cairo: Dār Muṣṭafā al-Bābī al-Ḥalabī.
2. al-Ṭāhir Rāwāniyya. (2017). Genre work and the poetics of collage and integration in the novel *Kayf Kayf* by Yūyif al-Baḥrī. In *Interaction between Literature and Other Arts* (Proceedings of the International Conference organized by the Master's Program in Communication and Discourse Analysis and the Cultural Heritage Laboratory, Faculty of Arts and Humanities, Ibn Tufail University, Kénitra, Morocco, 18–20). (pp. 103–104).
3. al-ʿAlwān, F. M. (2009). *Ishkāliyyat al-Minhāj al-Falsafī fī al-Khiṭāb al-Tashkīlī al-Muʿāṣir* [The Problematic of the Philosophical Method in Contemporary Visual Critical Discourse]. Damascus: Dār ʿAlāʾ al-Dīn li-l-Nashr.
4. Banshīkha al-Zīnī, U. al-Z. (2011). *Al-Fann Yakhruj ʿan Ṭawrihi aw Maflūm al-Rāʾiʿ fī al-Jamāliyyāt al-Muʿāṣira min Kant ilā Dīridā* [Art Beyond Itself: The Concept of the Sublime in Contemporary Aesthetics from Kant to Derrida]. Kuwait: Jadawel Publishing and Distribution.
5. Brusatin, M. (2018). *Qiṣṣat al-Alwān* [The History of Colours] (al-S. Istītīya, Trans.). Manama: Bahrain Authority for Culture and Antiquities.
6. Buqṭuf, M. (2019). *Al-Riwāya wa-l-Rasm min Khilāl Namādhij Riwāʾiyya li-Edward al-Kharrāṭ* [The Novel and Painting through Narrative Models of Edward al-Kharrat]. Amman: Dār Kunūz al-Maʿrifa li-l-Nashr wa-l-Tawzīʿ.
7. Cheng, F. (2017). *ʿAlā al-Mawt wa al-Ḥayāh* [On Death and Life] (F. al-Ḥamīd, Trans.). Damascus: Dār al-Furqad.
8. Darwish, M. (2000). *Al-Jidāriyya* [Mural]. Beirut: Riyāḍ al-Rayyes Books.
9. da Vinci, L. (2005). *Naẓariyyat al-Taṣwīr* [The Theory of Painting] (ʿĀdil al-Siwī, Trans.). Cairo: General Egyptian Book Organisation.
10. Gilot, F., & Lake, C. (n.d.). *Ḥayātī maʿ Bīkāsū* [Life with Picasso] (Mī Muẓaffar, Trans.). 2nd ed. Baghdad: Dār al-Rāfidīn.
11. Ḥusayn, K. M. al-D. (1997). *Masāʾil fī-l-Fann al-Tashkīlī min al-Fann al-Badāʾī ilā-l-Fann al-Muʿāṣir* [Issues in the Visual Arts: From Primitive Art to Contemporary Art]. Damascus: Arab Writers Union Publications.
12. Jawād, F. ʿA. al-J. (2010). *Al-Lawn Laʿbat Sīmiyāʾiyya: Baḥth Ijrāʾī fī Tashkīl al-Maʿnā al-Shiʿrī* [Colour as a Semiotic Game: An Applied Study in the Formation of Poetic Meaning]. Iraq: Majdalawi Publishing and Distribution.
13. al-Jazzār, M. F. (2001). *Al-Khiṭāb al-Shiʿrī ʿinda Maḥmūd Darwīsh* [The Poetic Discourse of Mahmoud Darwish]. Cairo: Itrāk Publishing and Distribution.

14. al-Jazzār, M. F. (2001). *The Poetic Discourse of Mahmoud Darwish.* (Cited reference, p. 117, 128–129).
15. al-Khāl, Y. (1978). *Modernity in Poetry.* Beirut: Dār al-Ṭalīʿa for Printing and Publishing.
16. Karād, S. b. (2019). *Tajalliyāt al-Ṣūra: Sīmiyāʾiyyāt al-Anṣaq al-Baṣariyya* [Manifestations of the Image: Semiotics of Visual Structures]. Casablanca: al-Markaz al-Thaqāfī lil-Kitāb.
17. Karād, S. b. (n.d.). *Tajalliyāt al-Ṣūra: Sīmiyāʾiyyāt al-Anṣaq al-Baṣariyya* [Manifestations of the Image: Semiotics of Visual Structures]. (Cited reference, p. 184).
18. Muḥyī al-Dīn, K. (1997). *Masāʾil fī-l-Fann al-Tashkīlī min al-Fann al-Badāʾī ilā-l-Fann al-Muʿāṣir* [Issues in the Visual Arts: From Primitive Art to Contemporary Art]. Damascus: Arab Writers Union Publications.
19. Rāwāniyya, al-Ṭ. (2017). "Genre Work and the Poetics of Collage and Integration in the Novel *Kayf Kayf* by Yūyif al-Baḥrī." *Interaction between Literature and Other Arts* (Conference Proceedings), Ibn Tufail University, Kénitra, Morocco.
20. al-Sālimī, S. (2011). *Shiʿriyyat Jubrān al-Mustamir Bayn al-Shiʿrī wa al-Fannī* [The Continuous Poetics of Gibran between the Poetic and the Artistic]. Casablanca: Dār Tūbkal li-l-Nashr.
21. Ababneh, M. D. (2023). *White as a Symbol of Death and Eternity in Darwish's and Lorca's Poetry: A Comparative Study*. Retrieved from ResearchGate. ResearchGate
22. Even-Nur, A. (2016). Mahmoud Darwish and the prosody of displacement. *CLCWeb: Comparative Literature and Culture*, 18(5). Retrieved from Purdue e-Pubs. Purdue e-Pubs
23. Al-Sheikh, N. (2021). Metaphors stemming from nature in the poetry of Mahmoud Darwish. *International Journal of English Linguistics, IJEL*, (May), full text PDF. Academic Journals
24. Jambak, M. R. (2024). Palestinian resistance in Mahmoud Darwish's poetry: Indirect expression in *"Bithoqoh Huwiyyah"* (With Identity Confidence). *Repository UIN Malang*. Репозиторий UIN Маланг
25. "Lorca, Darwish, white, death, eternity." (2023). *Journal of Literary Theory & Research*. Retrieved from jltr.academypublication.com.

Science, Education and Innovations in the Context of Modern Problems
Issue 11, Vol. 8, 2025

Title of research article

The Poetics of Whisper and Repetition: Phonetic Resonances and Emotional Architecture in Hanin Omar's Poetrynization

Abdelkarim Bensadek
Doctor
Faculty of Arts and Languages, Department of Arabic Language and Literature, Amar Telidji University of Laghouat,
Algeria
E-mail: a.bensadek@lagh-univ.dz
ORCID: https://orcid.org/0009-0002-4633-8819

Maamar Ben Ghouini
Doctor
Faculty of Arts and Languages, Department of Arabic Language and Literature, Amar Telidji University of Laghouat
Algeria
E-mail: maamarbn87@gmail.com
ORCID: https://orcid.org/0009-0004-5784-7357

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Poetic repetition; whispering poetry; phonosemantics; sound symbolism; Hanin Omar; Arabic women's poetry; inner rhythm; phonetic structure; emotional resonance; modern Arabic poetics

Abstract

This study explores the aesthetic and semiotic function of repetition in the poetry of Hanin Omar, focusing on its role in shaping emotional resonance and internal musicality through what may be termed poetic whispering. By integrating phonetic, semantic, and affective approaches, the research demonstrates that repetition in Omar's work—particularly of whispered consonants such as /h/, /t/, /f/, and /n/—constructs a delicate yet persistent rhythm that mirrors states of loss, longing, and introspection. Through close reading and quantitative phonosemantic analysis of the collections Bāb al-Jannah and Sirr al-Ghajar, the study reveals how repetition operates as a self-resonant structure: it produces not only formal beauty but also a psychology of echo, where emotion is subtly refracted through sound. The repetition of lexemes and syntactic units further contributes to the architecture of affect, translating silence into speech and transforming whisper into revelation. Thus, Omar's poetic discourse exemplifies how repetition transcends ornamentation to become a dynamic force of expression, rhythm, and meaning in contemporary women's Arabic poetry.

Citation. A. Bensadek; M. Ben Ghouini. (2025). The Poetics of Whisper and Repetition: Phonetic Resonances and Emotional Architecture in Hanin Omar's Poetry. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1195–1205. https://doi.org/10.56334/sei/8.11.98

Licensed
© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 08.02.2025 | Accepted: 17.08.2025 | Publishing time: 10.10.2025

Introduction:

Repetition constitutes a fundamental stylistic element within poetic structure, given its direct influence on rhythm formation, meaning condensation, and the generation of affective energy within the text. This phenomenon has long attracted the attention of critics and rhetoricians. However, modern poetry—especially in its female

expressions—has reconfigured repetition within a new aesthetic framework, based on phonetic and emotional deviation, and on the cultivation of internal confession and whispering language that implies rather than declares, conceals rather than exposes. In this context, repetition functions as both a phonetic and semantic tool to construct an intimate poetic world characterized by delicacy, fragmentation, and ambiguity, particularly when it relies on soft whispered sounds conveying the tremors and psychological and existential tension of the self.

From this perspective, this study arises from the question of how repetition is utilized in Hanin Omar's poetry to construct a whispering poetic language that conveys female emotional experiences and situates the self within the text, establishing an eloquence rooted in restraint, echoing, and measured resurgence. Does repetition in this poetic experience serve merely a decorative phonetic role, or does it constitute a semantic structure revealing psychological tension, existential transformation, and profound emotions? How does the phonetic structure (especially whispered sounds) relate to the affective-semantic dimension of the text? And how can this repetition be read through a modern critical lens that transcends form to reach the depth of the poetic self?

The significance of this study lies in its attempt to combine phonetic approaches with semantic analysis, through a critical reading based on selected examples from the collections *Bab al-Jannah* and *Sir al-Ghajar*, with the aim of uncovering the rhythmic, psychological, and aesthetic functions of repetition, and its relation to "poetic whispering" as an artistic strategy connected to the female experience and spaces of hidden and repressed expression.

1. Repetition and the Implications of Poetic Whispering:

1.1 Reciprocal Effects on Deep Affectivity:

When repetition emphasizes a specific emotional affect (and the condition for this type of repetition is that it appears within a highly emotional context, sometimes reaching a tragic level, so the repeated phrase amplifies the emotional intensity of the poem), (Al-Malaika, 1967) whispering imparts a sense of subtlety, softness, and calm, endowing the emotion with complete impact because it is presented indirectly. The reader senses the intimacy, veil, and poetic concealment of these emotions, which possess their own particularity and resist full disclosure.

1.1.1 Repetition of the Letter:

In phonetics, a letter is categorized into two main types: consonants and vowels. The consonant (Consonne) is distinguished by multiple features and linguistic functions, contributing to the structure of words and sentences through its repetition or distribution within a phrase. Its place and position within the context determine a distinctive functional role. Moreover, the repetition of a consonant or its proximity to other consonants creates an auditory rhythm that may vary between harmony and dissonance, forming a distinctive rhythmic image in the listener's mind. (Tabrmasin, 2003)

In modern poetry, consonant repetition is not arbitrary; rather, it reflects the poet's psychological state as mirrored in the structure of the poem. Studying these letters and their repetition requires statistical methodologies based on quantitative analysis and linguistic comparisons to identify specific patterns, rather than relying solely on visual text analysis. Hearing, as a sensitive perceptual tool, plays a crucial role in eliciting affective responses from the audience, making the effect and rhythm of repeated letters essential for perceiving the aesthetics of poetic texts and their psychological and rhythmic impact. (Tabrmasin, 2003) This is what we attempt to examine and explore through the poetry of Hanin Omar.

Whispered Sounds and Voiced Sounds: Affective Implications in Hanin Omar's Poetry

1- Whispered Sounds: Calmness and Ambiguity

Whispered sounds (such as "s," "sh," "f," "th") are characterized by their softness, producing no vibration in the vocal cords. This feature associates them with ambiguity, calmness, and affective states expressing reflection, sadness, or estrangement. In poetry, the use of these sounds may signify:

- **Inner Calm:** Whispered sounds reflect a quiet or subdued psychological state, making them ideal for depicting scenes of introspection or meditation. When the poet expresses solitude, sorrow, or self-exploration, whispered sounds provide a gentle, flowing rhythm to the text.
- **Ambiguity and Uncertainty:** Repetition of whispered sounds can create a sense of mystery or doubt. When the poet wishes to convey psychological confusion or uncertainty, these sounds effectively evoke haziness and obscurity.
- **Softness and Delicacy:** At times, these sounds indicate tenderness, especially in verses conveying love or subtle emotions. The soft articulation of the whispered consonant conveys warmth and fluidity.

2- Voiced Sounds: Strength and Conflict:

Voiced sounds produce vibration in the vocal cords and are inherently strong and distinct, conveying meanings very different from whispered sounds:

- **Power and Courage:** Voiced sounds are often used to express strength or resilience. In poetry addressing themes such as resistance, inner strength, or challenge, these sounds enhance the perception of power and determination.
- **Movement and Conflict:** When the poet wishes to depict dynamic or tense scenes, such as struggle or confrontation, voiced sounds increase intensity and excitement. Using these sounds in specific positions can make the reader feel the momentum of action or collision.
- **Clarity and Emphasis:** Voiced sounds lend a clear and direct tone to the text. When the poet aims to convey a concept or message strongly and explicitly, these sounds enhance clarity and amplify impact.

1- Repetition of the Letter L (Lam):

Examining Hanin Omar's poetry through the lens of repetition and whispering, we find in her poem *Al-Hālimūn Bilā Amal Wal-Āmilūn Bilā Ḥulm* (Dreamers Without Hope and Those Who Hope Without a Dream): (Omar, 2003)

"Al-Hālimūn Bilā Amal
Like (a woman :
An anthem fell upon her lips, and she sang
And poured poems to the sky
They did not inform her that she
In the midst of the melody, was lost from a string
They did not inform her that she
Was killed by beauty when adorned
Those features of hymnatic weeping
Crucified in her grief like the Magdalene
A torn heart that expanded in the vastness!"

Whispering: *(Do not dream!!!)*

The letter **Lam** appears 84 times in this poem, creating dramatic patterns that express sorrow, grief, loss, and the beauty doomed to vanish.

The line *"Al-Hālimūn Bilā Amal"* opens with a tragic portrayal of dreamers without hope. The L in *Al-Hālimūn* and *Bilā* establishes repetition highlighting the continuity of dreaming without resolution, evoking a sense of endless wandering. The dreamers "without hope" traverse an infinite loop, adding an underlying, subtle, whispered melancholy.

In *"Like a woman: an anthem fell upon her lips and she sang"*, Omar likens the dreamers to a singing woman, emphasizing the continuity of action through verbs *fell* and *sang*. The whispered "t" (Tāʾ) creates a soft murmur, suggesting these actions occurred quietly or suddenly, reflecting abrupt emotional rupture, as if singing results from a hidden, involuntary state of grief.

"And poured poems to the sky" continues with a whispered expression through *poured*, denoting a quiet internal confession or subtle acknowledgment. The repetition of L in *poems* and *sky* links poetic creation to enduring spiritual hope.

In *"They did not inform her that she was killed by beauty when adorned"*, the L in *informed*, *killed*, *beauty*, and *adorned* reinforces the rhythm and conveys continuous warning or foreboding. The notion that the woman was "killed by beauty" suggests that beauty, usually a blessing, turns into a curse. Here, Lam audibly reconstructs the tragic event: the woman adorned herself yet met her downfall through the very beauty she sought.

In *"Those features of hymnatic weeping"*, the L in *features* and *weeping* conveys inner, whispered emotion. These features are not merely external; they carry profound internal grief. Hymns of weeping suggest ongoing "sorrowful rituals" within her being.

"Crucified in her grief like the Magdalene" uses Lam in *crucified* and *Magdalene* to evoke submission and internal torment, likening the woman to Mary Magdalene, a literary symbol of penitence and suffering. The Lam in *crucified* signals a static, inescapable grief, akin to the permanence of the cross.

Thus, **Lam and whispering** play a crucial role in conveying the poet-woman's emotions. Lam, through persistent repetition, symbolizes continuity and fluidity in life, though painfully marked by loss and wandering. Whispering adds subtlety and mystery, expressing suppressed emotions and hidden events. This interplay between **Lam and whispering** reflects the poet's journey from *dreaming* to *loss* to *destruction*, as if trapped in an unescapable cycle

2. Repetition of the Letter Tāʾ (T):

The letter **T** recurs prominently in Hanin Omar's poem *Kam Tushbihuka al-Qasāʾid al-Qadīmah* ("How Much the Ancient Poems Resemble You"): (Omar, 2003, p. 30)

"Qad: the poem resembles me
It flows over my fingers
And two adventurous streams drip from me
Of the pearls of memory
And from a love that merged in amber eyes
Threads of light
I hang in them
Between me and the ultimate
My soul that...
Goes to it and does not return
It transforms me with its departure into a jasmine garden in love
And I become a small bird fleeing from the cage of the horizon
Roses of tenderness grow on my lips
The dew-adorned body decomposes"

In this piece, the repetition of **T** is evident, imparting a sense of softness and whispering. T is not merely a repeated sound but a structural element enhancing the poem's overall atmosphere.

In the line *"Qad: the poem resembles me"*, T repeats in *tushbihuni* ("resembles me") and *al-qasāʾid* ("the poem"), expressing the identification between the poet and the poem. T in *tushbihuni* reflects the poet's self-reflection and integration into the poem, functioning as a whispered sound, suggesting an internal, quiet, and intimate dialogue between the poet and her words.

In *"It flows over my fingers"*, T in *taḥāl* ("it flows") describes the gentle, continuous movement, conveying the smoothness and serenity of the poem as it takes shape over the poet's fingers. This whisper-like articulation emphasizes calmness and contemplation in the text.

In *"And two adventurous streams drip"*, T in *tasyīl* ("drip") repeats, enhancing the sense of continuous flow. This whispering T conveys the fluidity of movement, creating internal musicality and harmony between the poet and nature, as her thoughts and emotions flow like "two adventurous streams."

In *"My soul that goes to it and does not return"*, T in *tamḍī* ("goes") and *taʿūd* ("returns") expresses the ongoing movement of the soul. Whispered T here evokes departure and absence, describing a soul's path with inevitable, serene finality.

In *"It transforms me with its departure into a jasmine garden in love"*, T in *taḥīlnī* ("it transforms me") and *bustān* ("garden") reflects the poet's transformation into something new and beautiful. T conveys change, while *bustān* emphasizes beauty and purity after transformation. The repetition of T here imparts clarity, continuity, and quiet metamorphosis, giving the poem a sense of simplicity and serenity.

In *"Roses of tenderness grow on my lips"*, T in *tanmū* ("grow") and *shafṭay* ("my lips") reflects growth and flourishing, connecting lips with roses and tenderness. The repeated T contributes to the softness of expression, enhancing the intimacy of the poem and reinforcing poetic whispering.

In *"The dew-adorned body decomposes"*, T in *yataḥallal* ("decomposes") conveys transformation and dissolution into the surrounding world, emphasizing the transition from the physical body to spiritual purity, embodying gentleness. This decomposition is portrayed not as painful but as a quiet, natural process invoking subtle renewal and whispering serenity.

3. Repetition of the Letter Nūn (N):

The letter **N** recurs prominently in her poem *Sir al-Ghajar ilā Amīr al-Ghajar* **("The Secret of the Gypsies to the Gypsy Prince"):** (Omar, 2003, p. 23)

"O Gypsies arriving in the caravan of departure
The anklets carved by dances in the steps of departure
So I walked
Above the fringes of resonance
Towards the fringes of the suns
O life suspended in the evenings of the moon
O aged poetry upon lips
We followed its melody reluctantly
And willingly we followed...
Your night immersed in the darkness of my hair
And we followed...
(Your night of life) adorned in skirts that sing"

The letter N appears 85 times in this poem. Analyzing N through its recurrence and poetic whispering:

In *"O Gypsies arriving in the caravan of departure"*, N in *ālātūn* accompanies the notion of continuous movement, secrecy, and sorrow, as if the gypsies are constantly arriving and departing in hidden ways. N whispers subtly, akin to unseen, quiet footsteps.

In *"The anklets carved by dances in the steps of departure"*, N in *naqsh* ("carved") creates repeated sounds evoking the rhythmic, continuous motion of anklets during dance. N functions as a hidden whisper accompanying the movement and rhythm.

In *"So I walked above the fringes of resonance towards the fringes of the suns"*, N in *ar-ranīn* ("resonance") conveys a melodic, light rhythm, enhancing the continuous movement. N links resonance with the suns, turning the journey over "fringes of resonance" into a subtle, ongoing path toward hope. These repeated N sounds resemble poetic whispering, creating a faint internal music that animates the text.

In *"We followed its melody reluctantly and willingly we followed"*, N in *tabiʿnā* ("we followed") and *lahnaha* ("its melody") establishes rhythm. N resonates with obedience and melody, reinforcing the idea of following an inner, hidden sound, whether by compulsion or choice. These resonant sounds resemble inner whispers compelling movement.

In *"Adorned in skirts that sing"*, N in *tanānīr* ("skirts") and *tughannī* ("sing") reinforces imagery of decoration and hidden singing. It conveys the rhythm echoing within the skirts as they move, producing a sense of internal music associated with life, adornment, and song

4. Repetition of the Letter Fāʾ (F):

The letter **F** recurs in Hanin Omar's poem *Sayyidat al-Ḍawʾ* ("The Lady of Light"): (Omar, 2003, p. 73)

'I companioned the darkness of the heart with my depression
Seduced by the cold in the time of ice
I embroidered the edges of my wound with bleeding
I brushed it off with eagerness
All the dreams of intentions for healing
And ended up in my regret...
Seeking exit
And there is no exit
From the mercy of ancient death
On the weeping paths."

The sound **F** plays a pivotal role in shaping the internal rhythm of this excerpt. It signals a suppressed desire to express pain or to escape it. Yet the whispered **F** keeps this desire incomplete, reinforcing a sense of inner conflict. The whisper of F mirrors a hidden psychological state: pain exists but is not openly declared. Instead, it lingers as a continuous, searching murmur that seeks confession but to no avail.

In *"I embroidered the edges of my wound with bleeding"*, F repeats in *aṭrāf* ("edges") and *al-nazīf* ("bleeding"). Here, F reflects delicate, subdued movement, as though the wound itself whispers. The pain is "embroidered" onto the edges in a meticulous but muted way. F adds a steady, restrained rhythm echoing both physical and psychological continuity of pain. This whisper allows the reader to feel pain not as a scream but as persistent, unavoidable murmurs searching for release.

In *"I brushed it off with eagerness"*, F appears in *nafaḍtu* ("I brushed off") and *balahfah* ("with eagerness"). The whispered F conveys an attempt to rid oneself of pain. Yet *balahfah* reveals the attempt's hastiness and impulsiveness, failing to achieve its desired result. This whisper signals an incomplete wager: every effort to shake off suffering remains within the scope of ineffective murmuring, as though pain clings to the soul without hope of confession or healing.

In *"All the dreams of intentions for healing"*, F in *al-shifāʾ* ("healing") represents fragile, fading hope. The whispered F at the end of the word suggests healing is postponed or impossible. This sound adds a tragic dimension to the concept of healing — it is not complete healing but an unfulfilled idea, remaining a whisper inside the poet's dream.

In *"From the mercy of ancient death"*, F in *raʾfah* ("mercy") signifies the quiet, gentle relief death may bring. Here, the whispered F hints that the search for death is not a harsh or loud solution but a calm, subdued one. The F-sound embodies a form of whispered relief or mercy in the poet's pain-filled life — a promise of deliverance, but not a loud deliverance, rather a silent, hidden, whispered escape

3-1-2 Lexical repetition:

- The repetition of words in a poem does not merely create rhythm or melodic flow as letters do; it generates something deeper and richer. It weaves a **temporal extension (prolongement)** of the poetic text, opening spaces beyond the immediate meaning. This repetition produces a gradual **growth (excroissance)**, making the reader sense continuous movement, as if the poem itself is in a state of emotional expansion, similar to waves that accumulate with every rebound.

In this context, the repetition of a word becomes like a continuous pulse, giving the text additional momentum. With each recurrence, the psychological and emotional impact accumulates, creating a sense of cohesion and structural strength within the poem. This echoing enhances not only the unity of the poem but also imparts an epic quality, where the reader engages with each repetition as if participating in ascending emotional rituals. (Tabrmasin, 2003, p. 211)

Ultimately, repetition deepens the reader's relationship with the text. It does not simply make the poem pulsate with musical rhythm but provides a robust structure reflecting continuity and stability, adding irresistible allure and emotional depth.

Repetition of words based on musicalized sounds has been a technical tool used by poets across ages, but in contemporary poetry, it acquires a new dimension, transforming into a powerful artistic device that helps create a specific musical atmosphere in harmony with the poem's intended meaning. Repetition is no longer merely decorative; it becomes a prominent **phonetic technique** that strengthens the philosophical dimensions of the poetic text.

Through repetition, the poet generates a rising sense of symbolic meaning and emotional resonance that transcends the surface meaning of words. Every sound in the text, whether a letter or a word, carries musical energy aligned with the poem's overall rhythm. Repetition thus becomes not just a tool for musicality but a **phonetic technique reflecting a deeper philosophy** underlying the poem's construction.

This phonetic approach in contemporary poetry expresses a philosophy regarding the depth of human experience. It aims not merely to fill linguistic gaps but to convey a sense of temporal extension, continuity of the moment, and repetition of life and experiences, giving the poem dimensions that go beyond mere words into the depth of emotion and sentiment. (Relationships between words exist as sounds; the meaning of the poem emerges more from the construction of sounds than the literal meaning of words. This emergence of meaning is the product of the sound construction). (Al-Saadani, 1987)

In a poetic text, relationships are built not only on the apparent meanings of words but primarily on the sounds they carry. The aesthetic value and deep impact of a poem lie more in the phonetic structure of words than in their direct meaning. This approach transforms sounds into a communication tool that transcends conventional linguistic semantics, allowing the poet to use sounds to generate sensations that resonate with the reader on a deeper level.

In this framework, it becomes clear that the **phonetic structuring of words** is fundamental in building poetic meaning. The sounds, through their repetition and arrangement, can evoke emotions and feelings unattainable by words alone, making the poetic experience deeper and more impactful. This is evident in the repetition of words in Hanin Omar's poetry, as seen in her poem *"Inbiʿāth al-Yāsamīn"* ("The Jasmine's Resurgence"): (Omar, 2003, pp. 57–58)

"The jasmine of my balcony emerged
From my death in my resurgence and its passing
And the greenery spread with its coiled stem in the drought's grief!
It emerged...
After I bade farewell to the color of its flowers
And despaired of all life for no reason!
Is this the jasmine's resurgence???
Or my own resurgence...?
It visited me until I believed in the revolution of death, the brigade
If its scent veered...
And waves of the seas' dreams swept over
Is this the jasmine's resurgence
Or the resurgence of my fingers?
Bleeding became poems
Not written with ink
No...
Not woven by the pen
But...
Inscribed with sighs in the face of pain!
Oh my anguish...
Let it bloom in the soul until I end!!!"

In these lines, the repetition of *"emerged" (inbiʿathat)* and its derivatives expresses continuous whispering. Each recurrence is as if the poet summons the act within herself, gradually reconstructing herself through repetition. The poetic whisper extends beyond mere repetition to an internal renewal process, conveying an urgent desire to emerge from pain and loss.

Each instance of *"inbiʿathat"* carries a different nuance. Initially, it resembles a slow attempt at recovery, an internal whisper akin to returning to life. With each repetition, the tone escalates, suggesting incremental progress toward life—not with outcry or emotional explosion, but with quiet, continuous whispering. This whisper represents a subtle attempt to rebuild the self, reflecting a tension between the desire for life and the fear of confronting reality.

Repetition of *"inbiʿathat"* as a whispered act remains incomplete or uncertain. Rather than a shout of life or an explosion of force, it transforms into a soft echo through the poem's space. The poet seems to be testing the limits of her inner strength, questioning: *"Have I truly emerged? Or am I still in a state of internal death?"*

Here, repetition reflects the poet's tentative stance, using whisper and recurrence to express inner struggle while attempting to believe in the process of resurgence. Hanin Omar's repeated questioning—*"Is this the jasmine's*

resurgence? Or my own resurgence?"—illustrates profound uncertainty. The poet cannot ascertain whether her emergence is real or merely a reflection of nature's resurgence around her. Whisper serves as a vehicle to express these internal doubts, and each repeated question intensifies the search for an internal answer.

Finally, the whisper reaches its peak in *"Oh my anguish... Let it bloom in the soul until I end!!!"* Here, the whisper transforms into an internal call directed at the self. The alternation between resurgence and anguish reflects the poet's surrender to recurring pain. Emergence is no longer a natural act but the soul's resurgence through suffering and anguish. The whisper evolves from a faint sound into an internal scream, yet it remains confined within the self. *"Let it bloom"* conveys a deep desire for the continuous transformation of the self, even if the process is painful.

Through repetition, the poet explores the boundaries of self between life and death, emergence and dissolution, while *"inbiʿathat"* resonates throughout the text as an inner voice narrating a continuous journey from pain to healing, from whisper to muted scream, in an endless cycle

3-1-3 Sentence Repetition:

At this level of repetition, the structure is founded on the first and second levels and relies on the concepts of **"continuity"** and **"prolongement"**. However, prolongement here occurs laterally rather than longitudinally, whereas continuity in existence is an eternal concept unique to the Creator, may He be exalted. In verbal arts, particularly poetry, this continuity manifests through the repetition of elements, starting from the smallest up to the largest, where the poetic verse constitutes the maximal unit. Within this framework, the horizontal repetition of two or three words plays a decisive role in organizing or maintaining rhythm. When this pattern recurs across several verses, it forms a perpendicular arrangement. When **"perpendicularity"** intersects with **"lateral prolongement"**, a phenomenon described as **diffusion** occurs. This diffusion extends beyond auditory rhythm to encompass visual pleasure via literal ornamentation, delighting the ear with recurring motifs and enhancing the aesthetic appeal of the text. (Tabrmasin, 2003, p. 219)

This is evident in Haneen Omar's poem *Sayyidat Al-Matarat*: (Omar, Diwan Bab Al-Jannah (The Gate of Paradise), 2010)

*Ana imra'ah turid al-'aysh 'usfuran *** Fahal tardā turāfiquha janāhāti?*
*Ana imra'ah turid al-mawt sādiqah *** Wa-'āshiqah wa-tāhirah al-ghalālāt*
*Ana imra'ah bila ardh wa-lākinni *** Ilā ḍil'ayka yā rajuli intimā'ātī*

The poetess uses the phrase **"Ana imra'ah"** to repeatedly assert her selfhood, a form of whisper that carries a subtle emphasis on her identity as a woman seeking liberation. This repetition signals a strong desire for alignment with concepts of freedom and emancipation—not only in life but also in death, as she desires to die **"sincere"** and **"passionate."**

"Ana imra'ah turid al-'aysh 'usfuran" clearly expresses the desire for absolute freedom and flight; the bird symbolizes liberation, representing her aspiration to live without societal or traditional constraints.

"Fahal tardā turāfiquha janāhāti?" introduces a question addressed to a man, attempting to create a balance between the woman's desire for freedom and the longing for companionship. The wings symbolize freedom and ambition and challenge the man to accept her as she is.

"Ana imra'ah turid al-mawt sādiqah" emphasizes another aspect of self: the desire to die with sincerity, faithful to principles and values. Death here is not negative; it affirms an honorable, truthful life. Repeating **"passionate"** reinforces love and affection as integral to this self.

"Wa-tāhirah al-ghalālāt" reflects purity or spiritual innocence, which she wishes to preserve alongside her passions and desires. There is a balance between emotion and spirituality; she aims to live and love sincerely and purely.

"Ana imra'ah bila ardh wa-lākinni" expresses spatial non-belonging; she feels unanchored or possibly exiled, a sentiment common in women's literature where the female figure expresses instability or alienation.

"Ilā ḍil'ayka yā rajuli intimā'ā" shifts from spatial detachment to seeking belonging through a relationship with a man. The rib symbolizes protection and closeness; here, the desire is to find a place of refuge in the chosen partner. Her belonging is not to land but to the person who embodies safety and support.

The repetitive use of **"Ana imra'ah"** strongly signifies the poetess's assertion of self in a world that may make her feel lost or alienated. The whispering evokes an internal dialogue with herself and with others—a subtle, silent demand for recognition as a being capable of love, passion, and independence.

Results:

1. **Repetition is a functional structural device, not decorative:**

Analysis shows that repetition in Haneen Omar's poetry is not merely for surface-level rhythm but is a foundational tool that carries semantic and psychological energy, contributing to a richly emotive poetic space .

2. **Poetic whisper as a distinctive feminine expression:**

Repetition combined with whispered sounds (like L, T, F, N...) produces what may be termed **"poetic whisper,"** a stylistic expression aligned with the hesitant, contemplative, and reflective nature of the feminine voice confronting reality, self, or others .

3. **Literal repetition as a means to reinforce affective intensity:**

Statistical and close reading confirms that repeating whispered letters, especially in highly emotive contexts, imbues the text with an internal lyrical quality, enhancing psychological rhythm over overt musicality and reflecting affective states such as alienation, fragility, nostalgia, and emotional anguish (**Word repetition reflects inner tension and emotional dynamics:** Word repetition in Haneen Omar's poetry prolongs the internal temporality of the text, creating an accumulative emotional effect that enables the reader to engage progressively with the poetic scenario, reinforcing textual unity and internal musicality .

4. **Sentence repetition as a tool for building ascending emotional rhythm:** Reading shows that sentence repetition, particularly during self-assertion moments (as in **"Ana imra'ah..."**), grants the text emphatic and metaphorical dimensions, reflecting internal turmoil or the quest for recognition and existence, highlighting the poetess's socio-personal experience .

The poetics of repetition in Haneen Omar embodies an existential philosophy in writing: Repetition in her poetry is not merely a phonetic technique; it reveals an internal philosophy of contemporary female experience, turning poetry into a space for rebirth from pain and reconstruction of self through writing. Repetition thus becomes a secondary voice of the poetess, as significant as explicit meaning .

Acknowledgment

The authors express their sincere gratitude to the Department of Arabic Language and Literature at Amar Telidji University of Laghouat for their academic support and for providing access to relevant literary sources and research facilities.

Funding

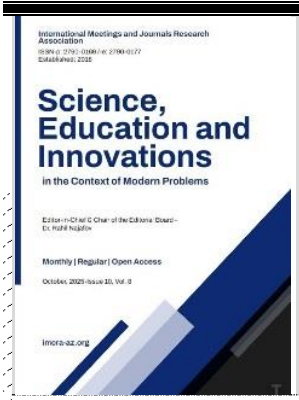
This study received no specific financial support from any funding agency, commercial entity, or not-for-profit organization.

Conflict of Interest

The authors declare no conflict of interest related to this research, its authorship, or publication.

References

1. Al-Malaika, N. (1967). *Issues of Contemporary Poetry.* Egypt: Nahda Library.
2. Al-Saadani, M. (1987). Stylistic Structures in the Language of Modern Arabic Poetry. Egypt: Manshat Al-Ma'arif.
3. Omar, H. (2003). *Diwan Sirr al-Ghajar.* Algeria: Ahl Al-Qalam.
4. Omar, H. (2010). *Diwan Bab Al-Jannah (The Gate of Paradise).* United Arab Emirates: Abu Dhabi Authority for Culture and Publishing.
5. Tabrmasin, A. R. (2003). *The Rhythmic Structure of the Contemporary Poem in Algeria.* Cairo: Dar Al-Fajr for Publishing and Distribution.
6. Al-Daghistani, M. (2021). Sound and meaning in modern Arabic poetry: A phonosemantic reading. Journal of Arabic Linguistics, 15(2), 101–120. https://doi.org/10.31436/jal.v15i2.1123
7. Al-Ghoul, L. (2018). The rhythm of silence: Phonetic aesthetics in women's Arabic poetry. Arab Studies Quarterly, 40(3), 205–224. https://doi.org/10.13169/arabstudquar.40.3.0205
8. Al-Jubouri, S. (2022). Repetition as poetic strategy in contemporary Arab women's poetry. International Journal of Arabic Literature Studies, 9(1), 33–52.
9. Barthes, R. (1977). Image–music–text. New York: Hill and Wang.
10. Fónagy, I. (2010). Languages within language: An evolutive approach. Amsterdam: John Benjamins.
11. Omar, H. (2015). Bāb al-Jannah [The Gate of Paradise]. Beirut: Dar Al-Adab.
12. Omar, H. (2018). Sirr al-Ghajar [The Secret of the Gypsies]. Beirut: Dar Al-Adab.
13. Saeed, Y. (2020). The acoustics of emotion: A phonetic study of Arabic whisper sounds in poetry. Language and Aesthetics Review, 5(1), 61–78.
14. Suleiman, Y. (2014). The Arabic language and national identity: A study in ideology. Edinburgh University Press.
15. Waugh, L. R. (1980). The poetic function in the theory of Roman Jakobson. Poetics Today, 2(1a), 57–82. https://doi.org/10.2307/1772135


International Meetings and Journals Research Association
Science, Education and Innovations
in the Context of Modern Problems
Monthly | Regular | Open Access
imcra-az.org

Science, Education and Innovations in the Context of Modern Problems

Issue 11, Vol. 8, 2025

Title of research article

The Aesthetics of Poetic–Scriptural Duality: Mechanisms and Dimensions in the Poetics of Ibn al-Muʿtazz

Doctor

Hadjadj Abderrahman

Faculty of Arts and Languages, Department of Arabic Language and Literature, Amar Telidji University, Laboratory of Language Sciences

Laghouat, Algeria

E-mail: aerhhadj@gmail.com

ORCID: https://orcid.org/0009-0002-4942-5838

Issue web link https://imcra-az.org/archive/385-science-education-and-innovations-in-the-context-of-modern-problems-issue-11-vol-8-2025.html

Keywords Ibn al-Muʿtazz; poetics of writing; poetry and prose duality; Abbasid aesthetics; literary mechanism; Arabic rhetoric; creativity; composition; stylistic harmony; classical Arabic criticism

Abstract

This study investigates the aesthetic and cognitive foundations of the dual relationship between poetry and writing in the poetics of Ibn al-Muʿtazz, one of the central figures of early Abbasid literary theory. It explores how poetic creation and the act of writing intersect within the framework of rhetorical construction, stylistic balance, and cultural consciousness. Through a textual and hermeneutic reading of Ibn al-Muʿtazz's Kitāb al-Badīʿ and selected poetic texts, the research highlights how the poet conceptualized the mechanisms of creativity as a dynamic process of composition, reflection, and self-awareness. The paper argues that the duality of poetry and writing in Ibn al-Muʿtazz is not a simple juxtaposition but a dialogic interaction that fuses spontaneous inspiration with intellectual craftsmanship. This interaction produces a unified poetic discourse in which rhythm, imagery, and linguistic refinement coalesce to construct meaning and aesthetic pleasure. By situating Ibn al-Muʿtazz within the broader Abbasid intellectual milieu, the study demonstrates that his poetics anticipates later critical debates about the nature of authorship, creativity, and the aesthetics of textual production in Arabic literary tradition.

Citation. Hadjadj A. (2025). The Aesthetics of Poetic–Scriptural Duality: Mechanisms and Dimensions in the Poetics of Ibn al-Muʿtazz. *Science, Education and Innovations in the Context of Modern Problems*, 8(11), 1206–1218. https://doi.org/10.56334/sei/8.11.99

Licensed

© 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the **CC BY** license (http://creativecommons.org/licenses/by/4.0/).

Received: 28.02.2025 | Accepted: 17.07.2025 | Publishing time: 10.10.2025

Introduction:

Poetry/Writing constitutes a concordant duality of function, performance, craft, and vocabulary a phenomenon deeply rooted in the world of the Arab poet and his milieu since ancient times, particularly in eras of civilization and urban flourishing. In such contexts, the poet engages the recipient in the act of reading, refining what he composes with deliberation, steadiness, and striking mental presence. He forges connections among carefully chosen elements to convey his experience, blending the instruments of poetry with the components of writing in a balanced act of productive reading and composition. This process unveils an evolution of thought, far-

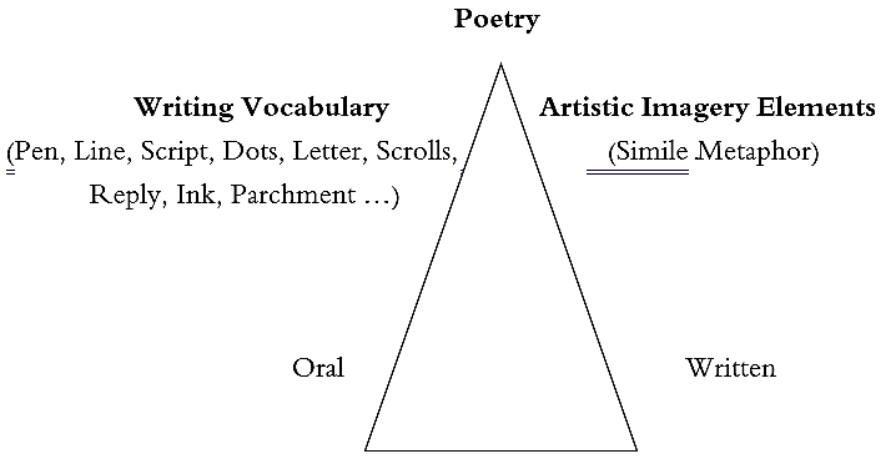
sightedness, eloquence, and expansive awareness and culture. It reveals the poet's dedication to endowing his creation with a unique flavor through his artistic descriptive language, articulated within diverse structures that shape the hierarchy and articulations of discourse.

This phenomenon flourished in the realm of composition during the post-Islamic eras through a subtle interweaving that reflects the poet's profound understanding and perception of his own essence and the surrounding world in all its components of sky and earth alike. Through this, the poet despite the scarcity of material presents his vision in a marvelous depiction of things. These are perspectives on significant stations of human existence, carrying deep resonance in the soul, which we seek to read, examine, and interpret just as the poet himself first perceived them by tracing the indicators and features that aid us in identifying the gaps, probing the network of relations among the units constituting the poetic text, and pausing upon the framework of the poetic image and its fundamental structures.

Thus arises the core problematic, which is the very locus of tension within this partnership, intersection, and articulation in the geography of shaping the body of the text. It can be summed up in the following questions: What is the nature of the Poetry/Writing duality? What are the elements that constitute it? How does the poet/writer achieve the necessary balance among the various functionally diverse components of construction? And to what extent did Ibn al-Mu'tazz succeed in offering a fully integrated image of remarkable harmony and coherence, serving as a model for a unique partnership of creative production, in light of the artistic, intellectual, and cultural capacities required by the process?

1 – Poetics/Writing: Reality and Models

The researcher of classical Arabic poetic texts particularly those associated with the post-Islamic period during its radiant golden ages discerns that functional relationship between the instruments of oral poetic artistry and the vocabulary of writing, expressed in the most exquisite imagery and the finest elaboration through familiar modes of metaphor. This is especially evident in depictions of nature, whether in the nasib such as ruins (atlal) or in themes of nasib, journeying, and pride, as in portrayals of animals and birds. (al-Din, Hasan al-Banna Izz, 2003) It also extends to other purposes connected with the human being/poet himself, both in peace and in war. This relationship is illustrated in the following schema:



A Unique Creative Experience

To illuminate the features of this interweaving in the phenomenon of the composite craft "Poetry/Writing", we present a number of examples. Here is Abu Tammam who, in the intensity of longing and ardent desire for the Other, imagines himself as a "line" within a letter ("poem"), so that he might be present before the Other (the beloved/reader): "He is read as imagined writing, his poetry standing in place of actual writing." (al-Din, Hasan al-Banna Izz, 2003, p. 237) He says: (Tammam, 1999)

Had I the power, I would have inscribed my passion and longing for you;	**	Instead, I became a line within my book.

It is the burning passion for the beloved, to the point where the oral becomes writing—an imaginative inscription with its impact, presence, and influence through the units (katabtu ... satran ... kitabi). In this lies a hidden feeling and a veiled mental awareness that channels the psychological state into a realm of present vision, embodying the suffering and transmitting it literally to the Other, urging a response and realizing the desired union.

It is the very same experience endured by al-ʿAbbas ibn al-Aḥnaf, until the features of love appeared to him on the forehead as though inscribed upon parchment. He says: (al-Ahnaf, 1954)

Love has written upon my forehead a book,	**	Clear, like writing upon parchment.

And another poet, following the same path, declares:

I wrote—yet if only my fingers could ** Depict me as a letter reaching you in my book.

Here, the units (katabtu ... harfan ... kutubi) correspond with "depict me", uniting writing and speech as a sign of the poet's central focus: touching the depths of the human soul (the Other) through a unified act and a craft of parallel activity. This achieves interaction between the outward and the inward, the external and the internal, wherein the self emerges as a complete, unique, and captivating whole.

The vocabulary of writing, which the poet employs from time to time across different purposes of his poetry, and in diverse contexts with knowledge, awareness, and foresight carries meaning and impact in affirming the self and establishing existence. Researcher Ḥasan al-Banna ʿIzz al-Din states: "For written consciousness implies what Ong calls a 'turn inward'." (Ong, 1994) Ong further clarifies: "Although human existence means being a person and thus unique and unrepeatable, the growth of historical knowledge has shown that the way in which a person feels about himself in the universe has developed in a patterned manner through the ages." (Ong, 1994, p. 306)

Thus, the phenomenon of poetry/writing reflects the poet's consciousness, maturity, and the completion of his self in feeling, thought, and composition. It is a consciousness that arose within the folds of history and the diverse circumstances of life, in direct contact with the Other and with the surrounding world. This compels the poet constantly toward growth and development, enhancing his capacity to express and articulate himself in affirmation of his existence and in response to his audience.

This consciousness, as Ong (quoted by ʿIzz al-Din) describes, is distinguished by "the growth of a concern capable of expressing itself within the individual's interiority, as a being apart from collective structures though not necessarily separated from them structures which inevitably encompass every person. Self-awareness, in its temporal and spatial extension, is equal to humanity: whoever can say 'I' possesses a sense of self. Yet the reflective capacity and the ability to articulate the contents of the self require time to grow." (Ong, 1994, p. 71)

The experience here thus represents a developed system of structure, imagination, and craft that fuses the units of oral form with the vocabulary of written form in a distinctive figurative, phonetic, and literal expression.

In this regard, the khamriyyat (wine poetry) of Abu Nuwas offer vivid images of this blending between the oral and the written, reinforcing the phenomenon, highlighting its dimensions, and showcasing the elevated consciousness of its author. He says, while in the company of a companion in a tavern, describing the scene and portraying the state of his comrade absorbed in wine: (Nuwas, 1999)

He brought his cheek close to the jugs,	**	And laughed with joy at the wine's sparkle.
He poured, and it revealed itself, then mingled, and	**	Eight little waws, smiling upon the line.

inscribed—		

Researcher Hasan al-Banna Izz al-Din comments on the two verses, saying: "There is no doubt that the laughing waws correspond to the joy of the companion, while they also soften the 'frown' of the wine when it responds to the poet's question as to whether it had been contained by Khosrow ('it frowned'), accusing him of lack of patience, since it had heard of Dhu al-Qarnayn before his departure, and had perceived Moses before his companion al-Khidr. Thus, the eight laughing waws (equal to the number of metrical feet in the verse itself), though written against their will, are nevertheless 'laughing,' and therefore seem closer to the destiny of man, where laughter mingles with frowning, and life with death ..." (al-Din, Hasan al-Banna Izz, 2003, p. 245)

It is the irony of fate that reveals certain truths of life in a grimly comic scene, through the juxtaposition of opposites that have become proximate, until the two contraries appear as two sides of the same coin in an age where distinctions have dissolved to the point of disappearance.

And although the literal inscription of the "waws" remains fixed, it has kindled the poet's imagination and assisted him in conveying his vision and embodying his perspective, owing to their richness of connotation and depth in representing hidden meanings. For this reason, he repeatedly employs them in various places to highlight the features of the passing moments that seize him as poet/writer. Thus, here he is, drinking aged and blended wine, when he says: (Nuwas, 1999, p. 289)

It leaps when touched by the strike of mixing,	**	Just as grasshoppers leap in the noonday heat.
And it adorns itself with pearls from its swirling folds,	**	Which, in their mingling, resemble the shapes of waws.

Numerous are the exquisite verses in Abu Nuwas's craft of simile, where he relies on letters or signifying units from the lexicon of writing. Such similes reveal wit, ingenuity, and depth of reading, especially when it comes to blending things that are either proximate or even far apart, in order to shape an image according to a distinctive vision. Hasan al-Banna ʿIzz al-Din, in his reading of the two verses, explains: "The comparison of the leaping of wine its mixing and bubbling to the leaping of grasshoppers suggests the sexual connotation inherent in the root (naza) as found in Lisan al-ʿArab. Yet the wine itself also has its 'nawazi', which are its jandaʿ (with ʿayn) when it is mixed. The jandaʿ is a black locust with two long horns, and it is the largest of the grasshoppers though it may also be the smallest, according to Lisan al-ʿArab (entry: jandaʿ). Thus there is an implicit competition between the midday grasshoppers and the wine's jandaʿ in their 'leaping,' which in turn produces 'pearls' that rival the poet-writer's 'waws'." (al-Din, 2003, p. 246)

These are the traces of the written dimension in portraying the present scene and revealing its depths, whether consciously or intuitively. And here is Abu Tammam, who, within the context of war, sketches the features of the patron's courage and valor, extolling the sword and what it wreaks in striking terror into enemies. He says (Tammam, 1999, p. 372)

You wrote their faces with strokes of draft and art,	**	With blows and thrusts that pierced the proudest heart.
A script eternal, ever read, yet not by pen—	**	No lam nor alif traced those lines of men.
And if they cling to denial, still remain,	**	Their faces pages, inscribed with what you have slain.

He employed writing-related vocabulary (katabtu ... kitaba ... maqru'a ... khattattu ... la ma wa-la alifan) in a way that renders the image more precise in conveying the event. The enemies' faces once struck and pierced by swords were disfigured, their features altered, until they resembled a page inscribed with lines of shame, humiliation, defeat, and collapse. These are traits of an implicit reading from which one may discern numerous hidden meanings within the field of war.

This is akin to what al-Mutanabbi achieves when he extols the patron in his most magnificent portrayals of heroism and combat. He says: (al-Mutanabbi, 2014)

The knights' spears are turned away by his mail,	**	A rain of lances pours, yet it prevails.
The lofty blades trace lines but pierce it not	**	As though each spear were but a pen it wrought.

The shield of the patron is battered by the enemy's spears from every side, yet it neither kills him nor wounds him. Here, the poet/writer sharpens his gaze upon the scene: the tips of those spears appear to him as pens writing upon parchment, leaving their marks without piercing it. Implicitly, this suggests victory and dominance not for the enemy, but for the patron, in his steadfastness, pride, dignity, and resilience.

The combination of vocabulary drawn from nasib, wine, war, nature, and the lexicon of writing, among certain distinctive poets of the flourishing ages, demonstrates their concern to elevate the artistic and aesthetic dimensions of their craft making them deeper, subtler, and more elusive in order to captivate audiences. This compels recipients to mobilize their intellectual capacities, mental energies, and cultural competences in the act of reception, thereby participating actively in generating implied meanings (the unspoken), as a directed contribution toward achieving the poet's purposes.

This, indeed, is the essence of poetics, especially when interwoven with the tools of writing. The act of composition then acquires a special nature, a distinctive taste in rhythm, vision, and concerns, revealing the stance of the poet as a human being toward the world, society, and existence across time and space. In the view of Abu Dib, it is the act of the gap: the space of tension within the domain of colors and the architecture of environmental form. He observes that "the importance of place and time in poetics and in the history of poetry springs from this very structure: every poetics is nothing more than an exploration of relations that situate themselves in space, in time, or in both. In certain ages, poetics inscribes itself through its passion for either one of them or for both together." (Dib, 1987)

Adonis, for his part, emphasizes the effect produced by the blending of poetics and thought in Arab creative production, identifying the intellectual dimension of poetry at four levels. First is the poetic image that unveils the obscure and hidden within man, revealing what the reader senses or contemplates without yet recognizing, offering him keys and means of insight into his inner world, allowing him to understand it more fully. Second, this image discloses the essential dimensions of the external world, uncovering what had been repressed, unknown, or neglected, creating in its presentation questions that point toward other truths, expanding the scope of knowledge and breadth of experience. Third, these revelations and questions, transmitted through reading, shift from the domain of emotions to the domain of comprehensive structures, transforming the aesthetic into the existential and intellectual, and the personal into the universal and collective. Fourth, among these revelations are some that rise to the level of serving as keys to an unknown, or as foundations for the construction of new conceptions that had not been anticipated. (Adonis, 1984)

2 – Ibn al-Mu'tazz the Poet/Writer:

Abu al-'Abbas 'Abd Allah ibn al-Mu'tazz was born in 247 AH / 861 CE in Samarra. He grew up in a house of power, prestige, and sovereignty. He was educated at the hands of the masters of language and eloquence in Basra and Kufa, and he heard rare expressions and the pure language from Bedouin arrivals. He immersed himself in the heritage of the ancients, in what had been translated of science, literature, and philosophy, and in the sciences and literature of the Arabs, until his growth was complete and he rose to his stature, becoming a source of admiration and pride (Ibn al-Mu'tazz, 2000). He wrought marvels both in poetry and in writing. Abu al-Faraj al-Isfahani says of him: "Among the caliphal princes who excelled in art and literature was Abu al-'Abbas 'Abd Allah ibn al-Mu'tazz, who surpassed and outshone all the people of his age in virtue, nobility, literature, wit, and mastery of every branch of learning." (Adonis, 1984)

He is the crown of caliphs, the creator of delicate poetry in descriptions and similes. It was he who said: "If I were to say 'as though' and not follow it with a simile, may God shatter my mouth." (Adonis, 1984, p. 166) At

the same time, he was a man of the pen, devoted to writing and composition, following in the footsteps of his teacher Ja'far ibn Qudama the poet-writer until it was said of him: "He was the most poetic of the Hashimite princes and the most accomplished in prose throughout the Abbasid state. His similes were beyond comparison or likeness, and his descriptive poetry beyond the reach of imitators." (Adonis, 1984, p. 168)

He traces the object of description in motion and stillness, in heaven and on earth, with measured doses of conscious emotional sensitivity that grant him the ability to select the building blocks of his enchanting and compelling artistic architecture. Thus, gazing intently with passion at raindrops as they touch the earth, he says: (Ibn al-Mu'tazz, 2000, p. 69)

She hastened, gifting earth a youthful gown,	**	A Rajab rain, its pouring wins renown.
Its earliest drops were scattered, as though they were	**	Quick-drawn dots upon a book's interior.

He says, observing the swords as they tremble: (Adonis, 1984, p. 67)

The swords, when shaken in the heat of fight,	**	Were like leaves trembling at the falling rain.

He is the poet as phenomenon, the innovator of beautiful images that captivate the soul. He describes in order to portray, as a sensitive and skillful poet, and he scrutinizes in order to deepen, as a writer of profound reflection. This is the very nature and disposition of Ibn al-Mu'tazz, the poet/writer, rooted in his penetrating vision of life's horizons where mastery of language, breadth of imagination, delicacy of sensibility, sharpness of observation, and keenness of intellect all converge.

Poetic Aesthetics of Writing Elements in Ibn al-Mu'tazz: Mechanisms and Dimensions

The reader of Ibn al-Mu'tazz's poetry encounters many signs of writing: traces of script, units of composition, and elements of inscription that constantly accompany artistic formation, contributing to the solidity of structure, the beauty of fused expressions, and the expansion of semantic capacity. This bestows upon the text a distinctive aesthetic quality, born of a deliberate harmony between reason/reality and emotion/imagination, in a duality of composition nourished by knowledge, underpinned by science, and guided by awareness and refined sensibility—especially within the Abbasid poetic tradition. It represents a special model that elevates the poet to a level of eloquence and culture granting him the power of penetrating vision and captivating aesthetic depiction. Thus, he penetrates the realm of existents, probing their truths, uncovering their hidden recesses, and revealing their secrets. How could it be otherwise, when he is the poet-human intelligent, astute, and embodying the highest degrees of poetic knowledge? Here, as Hasan al-Banna Izz al-Din asserts, "Poetry must be sought at the very heart of the relationship between poetry and science, not at its margins. Poetry is knowledge, acumen, awareness, perception, and feeling." (al-Din, 2003, p. 129)

A pioneering experience emerges interweaving the reservoir of knowledge, both poetic and written, with perspectives drawn from the map of existence, to delineate the dimensions and features of a geography of place. These often appear before the poet in tangible forms or vivid images, stirring his material imagination, challenging his intellectual capacities, and serving as a stimulus for crystallizing visions, translating ideas, and deepening understanding. To embody this, our poet resorted to a set of mechanisms as building blocks of his artistic architecture, in response to the yearning for beauty and delight among recipients. We shall follow them through modeling and interpretation.

3 – Manifestations of the Aesthetics of "Poetry/Writing" in the Poetry of Ibn al-Mu'tazz

3.1 – Writing and Ruins / Hearthstones of the Abode

Time has played with things and beings, ravaging them mercilessly, altering their features, erasing their signs, and making them prey to decay and obliteration. This is especially so with the remains of a dwelling once abandoned by its people just as in the pre-Islamic tradition where the image of ruins takes form in a scene

resembling script or writing upon an open manuscript. Ibn al-Mu'tazz, lamenting the tyranny and power of time, says: (Ibn al-Mu'tazz, 2000, p. 327)

He cursed the age for a ruined trace,	**	Between al-Mushqar and al-Safa's place.
As though the hands of passing nights had spread,	**	An open Qur'an, its pages widely read.

In his reading of the scene/image, the poet appears deeply disturbed and discontented with the workings of time and its tyranny, for it possesses an overwhelming power and eternal decrees by which all existents, in its course and recurrence, are transformed into traces and remnants occasions for reflection and admonition. This compels the poet to contemplate them closely, regarding them as writing/signs pointing toward the destiny of man upon the earth (al-Din, 2003, p. 174). The poet's very effort in composition is but a reading of this writing upon the open mushaf/earth, after examining its symbols and probing the truth of human fate—something that kindles in the self feelings of helplessness, weakness, and surrender.

The poet continues to employ the mechanisms of writing, interrogating the hearthstones of the abode, and evokes the letters with deliberate reference to their "dotting." He says: (Ibn al-Mu'tazz, 2000, p. 39)

Pass by the dwelling where we once abode,	**	It changed so much since our familiar road.
All else has vanished—save for three that stay,	**	Like dots of tha' upon its script alway.

Here the grim truth of the scene is revealed the place, the ruin, whose features have been effaced and from which movement and life have departed. It now lies heavy upon the earth in an ominous form, a source of misery, a mark of weariness, and a cause of hardship, affliction, and dread embodied in the three hearthstones that correspond to the dots of the letter tha', signifying ill omen and misfortune. (Ibn al-Mu'tazz, 2000, p. 19)

It is a dark image, conveying a heavy burden of sorrow and distress, in a moment of anguish over a bitter fate. The poet, journeying on his camel, follows the traces of landmarks upon the earth with patience, endurance, and profound thought, acknowledging the power of the heavens over the earth and surrendering, in the end, to the Almighty. He says: (Ibn al-Mu'tazz, 2000, p. 40)

A she-camel cast into a desolate waste,	**	Burdened with grief that stirs while others rest.
She leads the caravan upon its way,	**	Like "Bism" inscribed on her book each day.

3.2 – Writing and Nature

Nature has always been, and continues to be, a space of captivating beauty, a realm of splendor and radiance. It adorns the universe and illumines it, sketching upon its surface the most wondrous images in the most marvelous forms and colors. Thus it becomes a site of attraction, inspiration, and profound influence for poets enchanted by the charm of its dazzling manifestations, the loveliness of its enchanting scenes, and the marvel of its stirring spectacles, both in the heavens and upon the earth.

Ibn al-Mu'tazz, the poet/reader/writer, describes lightning, exulting in his emotional response as though in the act of reading the writing of the sky: (Ibn al-Mu'tazz, 2000, p. 244)

I lay awake for lightning's ceaseless gleam,	**	Its darts like falling stars in endless stream.
As though its brilliance in the vaulted sky	**	*Were lines inscribed with liquid gold on high.*

He also says of it, as the poetics of writing surged within him: (Ibn al-Mu'tazz, 2000, p. 325)

The lightning seemed a reader's holy book, ** ***Now closing once, then opening with a look.***

His gaze extends to the crescent moon, in awe at the drawing of the sky, as he says: (Ibn al-Mu'tazz, 2000, p. 251)

Behold the crescent's beauty, as though it were	**	A gilded "nun" on turquoise clear and fair.
And see its stars, like single daffodils that rise,	**	Above violet fields, blooming in the skies.

And in the course of observing the manifestations of nature and the sky, a great cloud appears before him, about to pour down rain, becoming a source of blessing, goodness, and bounty. He says: (Ibn al-Mu'tazz, 2000, p. 502)

It came at dawn to clothe the earth in youth,	**	A Rajab rain, whose pouring speaks of truth.
Its earliest drops were scattered as they fell,	**	Like hurried dots upon a book's fair shell.

He continues his experiences with the wondrous creation of the sky, to have a stance with the night, looking intently with deep focus, as the dense darkness captivates him, and a vision of the scene bursts forth before him in a strange and striking image. He says: (Ibn al-Mu'tazz, 2000, p. 599)

The darkness added a meaning to the nun of his poetry,	**	So it lengthened, and without that it would not have taken the jarr.
And his eyebrow was the protecting nun, preventing,	**	According to its condition, the act of the eyelids from breaking.

It is part of our poet's visions and his readings of radiant pages from the wondrous scenes of the sky, which poets have continually pursued and observed at all times for knowledge and reflection. And just as writing translates nature with all its marvels and grants it a beauty that imagination cannot fully embody, so too does nature, in turn, provide the creative poet keenly aware and perceptive of the things around him with supportive tools, through the names of its various phenomena, to expand his vision, refine the drawing of forms, angles, and points of contact with the realm of existence. Thus the scene for him shifts from writing/nature to nature/writing, and Ibn al-Mu'tazz "sees writing and its lexicon through nature and its vocabulary ..." (al-Din, 2003, p. 197)

This is the case in the pairing of "the notebook" and "the bow," where his focus rests on the craftsmanship and proportionality between them, as though the notebook had been made by man from nature and then turned into another state. (al-Din, 2003, p. 198) He says: (Ibn al-Mu'tazz, 2000, p. 565)

Here it is, brocaded, adorned with decoration,	**	Woven by fingers with every weave.
In a form that takes the empty letter,	**	As though its lines were branches of thorns.

From this, the poet-writer-reader produces something akin to a disturbance that transforms one thing into another, in light of what nature provides in terms of active elements that embody meaning and convey the idea in a marvelous and astonishing way. "The craft of the notebook and what is written in it of lines becomes confused with the nature of thorny branches" (al-Din, 2003, p. 198) an allusion to the difficulty of composition and the severity of its labor pains, a translation of the fruits of the mind. This requires the availability of a reservoir of knowledge and culture, as well as a mental presence capable of comprehension and understanding. This is what researcher ʿIzz al-Din points to in his statement: "This reciprocal written consciousness between nature and writing, if one may say so, is what bestows particularity upon Arabic poetry especially after Islam and the establishment of Arabic writing and poets' assimilation of their world through their poetic craft and their

human awareness alike. This reciprocal written consciousness between nature and writing, if one may say so, is what bestows particularity upon Arabic poetry especially after Islam and the establishment of Arabic writing and poets' assimilation of their world through their poetic craft and their human awareness alike." (al-Din, 2003, p. 197)

3.3 – Writing and Wine Companionship

The Abbasid era the poet's milieu was an age of civilization, openness, and mingling among peoples and races. In it, some people immersed themselves in wine-drinking and excelled in establishing gatherings of conviviality and companionship, providing all forms of luxury, ease, and refinement. The poet often attended such moments of intoxication, overcome with feelings of play and libertinism, and would break forth into recitation, observing those occasions and describing the scenes that appeared before him in the most exquisite depictions and representations.

Ibn al-Muʿtazz, describing the one who pours them wine, says: (Ibn al-Mu'tazz, 2000, p. 124)

By the hand of a gazelle with lock and tress,	**	With two sideburns like two qafs at the ends of a line.

The "cupbearer" here is likened to a graceful, elusive gazelle that is quickly domesticated especially through his face, with its lock and tress, and two sideburns like the two letters qaf placed at the edges of a line (al-Din, 2003, p. 242)

In this appears the precision of observation and the depth of reading the scene through carefully following its sensory details, with attentiveness and remarkable mental presence. This summons the active element of clarification the mushabbah bihi (the object of comparison) from among the letters of writing, carrying the same qualities of the image and fully conveying the intended meaning.

Our poet continues to shine in the realm of refined literary imagery, seeking his similes in the sounds and letters of writing. He says in another place, observing the face of the cupbearer: (Ibn al-Mu'tazz, 2000, p. 228)

And traced above the pearl-like veil his mustache,	**	Like half a Ṣad, and the curve of the temple like a Nun.

Observation: Here Ibn al-Muʿtazz, the poet/thinker, perceives the meanings of the shapes of letters of writing and their differing formal significations rising and descending, extending, curving, and circular. He evokes the Ṣad, using half of it to represent the line of the mustache, and he evokes the Nun to represent the roundness of the temple of the face. In this he shows firmness and stability in the signification of his choice, whether in personification or concretization, especially when it concerns the very object being described.

He says, describing the temple of the cupbearer's face: (Ibn al-Mu'tazz, 2000, p. 231)

He curved his temple like a Nun beneath a forelock,	**	Held fast, adorned by the ivory of his brow.

It appears that our creator this "conscious calligraphic painter" has involved both the Qaf and the Nun, signifying their qualities of containment and fullness. For the two temples, being like two Qafs at the ends of a line, suggest the cupbearer's ability to serve those sitting near or far. Likewise, the "curving" of the temple and its circularity "like a Nun," in the last two verses, suggest the graceful movements of the cupbearer, reminiscent of the gazelle in the first verse. (al-Din, 2003, p. 242)

Thus, the poet's images and similes manifest themselves through the shapes and forms of the letters of writing, which draw their frames and boundaries and reveal their functional dimensions. The Alif, for example, was named Alif because it brings all the letters into harmony aligning and joining with them in structure and weaving. In its form, it resembles an upright column, corresponding to all that is similar to it in height, such as a man standing. And so Ibn al-Muʿtazz says, in describing the figure of the cupbearers: (Ibn al-Mu'tazz, 2000, p. 218)

As though the cupbearers among the drinkers	**	Were Alifs standing upright upon the lines.

The scene of the cupbearers standing in service of the drinkers, who are seated in a row, each according to his state, movement, and reaction to what is taking place around him, resembles the columns of a mosque that rise upright, between which the worshippers line up in prostration or bowing. (al-Din, 2003, p. 243)

3.4 – Writing / Animals and Birds

Just as Ibn al-Muʿtazz was preoccupied with the manifestations of nature and the sky, he also closely observed what occurs in the earthly realm of nature, with attentiveness, steadiness, and far-sightedness particularly regarding animals and birds. These appear in vivid scenes where writing, through its various associations, intertwines with what the poet encounters among animals and birds in a meaningful way. He thus presents refined models of correspondence, parallelism, and analogy, achieving aims that deepen the semantic weight and broaden its scope through contemplation, perception, and knowledge.

- **Writing / Animals**

In the context of animals, our poet offers descriptive, contemplative, and striking depictions, which belong to the very core of authentic Arab imagination in the field of ṭard (the hunt). He describes a female dog, saying: (Ibn al-Mu'tazz, 2000, p. 254)

We drove against the eyes of wild beasts and gazelles,	**	A dire creature, dreaded to encounter.
Raised high, like a dark scorpion,	**	Sharp and swift, with loosened entrails.
As a stroke from a black pen,	**	Or a fringe from the edge of a cloak.

In this context, our researcher ʿIzz al-Din, in his valuable work Al-Shiriyya wa al-Thaqafa (Poetics and Culture), cites an example from the rajaz of Ibn al-Muʿtazz in describing nature with the presence of gazelles. He says in it : (al-Din, 2003, p. 275)

I saw a herd of gazelles	**	In a fresh, verdant meadow.
Their gloom was lifted by what the water's moisture caused to grow,	**	So they departed without weariness.
I likened them, from afar,	**	To a stroke from a black pen.

She is content with blood instead of flesh.

And he comments on this by saying: "The removal of the 'gloom' from the herd of gazelles in these verses is not achieved except by 'distance' from them, with enough space to imagine them through the movement of the stroke of the pen. And this stroke is nourished by the blood of flesh, which suggests the 'activity of the gazelles' departing from the meadow, likened by the poet in a 'scriptural' manner." (al-Din, 2003, p. 204)

A simile that contains indicators revealing the precision of Ibn al-Muʿtazz's thought, his far-sightedness, and the depth of his vision of things—something that enables him, as poet-writer, **to embody them in marvelous images blending writing and animal.**

- **Writing / Birds**

And just as he introduced writing into the images of animals by way of comparison and analogy to delineate the features of the scene through elements of intersection between the two, revealing the closeness and similarity that make it possible to read what occurs, even mentally, in the world of simile, especially when it is most precise, he also employed some mechanisms of writing in the images of certain birds, such as in his description of the falcon. He says: (Ibn al-Mu'tazz, 2000, p. 469)

A falcon that understands the speech of the speaker,	**	Compact of head, majestic of shoulder.
With curved talons, eager and swift,	**	As though they were nuns of the scribe's hand.
With a breast adorned in fine embroidery,	**	Like the beginnings of the lam-letters on parchments.

And in his description as well, he says: (Ibn al-Mu'tazz, 2000, p. 468)

With a curved talon like the nun of the scribe,	**	And a breast adorned in fine embroidery.
Like the traces of pens upon the parchments,	**	Or like the remains of kohl in the eyelids.

And in the same context, researcher ʿIzz al-Din, while analyzing this subject, included verses by our poet that highlight his incorporation of writing into the image of the hawk. He notes that "he has combined night and morning, while at the same time separating them, in the same way that the lives of the birds hunted by the hawk are separated from their bodies." (al-Din, Poetics and Culture, 2003) Ibn al-Muʿtazz says: (Ibn al-Mu'tazz, 2000, p. 394)

As though, when we had traveled a farsakh,	**	And morning had risen proudly in its east,
While night had settled firmly in its west,	**	It was a manuscript of a scribe, in the most precise copy

And our researcher observes: "This image, upon reflection, contains a description of the precision of the hawk's colors between black and white and the exactness of their arrangement in its form. And there is no doubt that the context in which the poet has placed it here makes the hawk closer to the 'craft' of a scribe, seized by awe and solemnity as he scrutinizes his copies." (al-Din, Poetics and Culture, 2003)

In all the examples we have presented, Ibn al-Muʿtazz remains the distinguished poet-writer who demonstrated superiority in the field of writing-consciousness. Through what writing provides in the domain of composition/art in terms of tools of coloring, shaping, and imaging, he effectively contributes to the depiction of the realms of existents and the determination of their features.

CONCLUSION:

The duality of Poetry/Writing or what ʿIzz al-Din calls "poetic/written consciousness" constitutes a central and fundamental nucleus with significant efficacy in the process of reading the artistic formation of the elements of the universe and the realms of the self. It opens a wide horizon for the conscious, inspired poet-writer to perceive nature and the world around him.

Among the most important findings of this research in light of this duality/partnership are:

Poetry/art has found in writing, with its arsenal of composition and documentation, the means to invest in this field, expanding the scope of imagery, artistic architecture, and the imaginative dimension. This enables the poet to discover various expressive tools and elements necessary for translating his ideas and embodying his visions.

The contemporary experiences of the Arab poet shaped by the circumstances and transformations of life require knowledge, culture, and science that broaden his horizons, enlighten his thought, sharpen his imagination, and deepen his vision of things. This makes him more aware and perceptive of the fluctuations occurring in his life and environment, which demand emotional flow and mental presence with keen insight and sharp intelligence.

The universe, with all its components, is a space brimming with movement and life especially its enchanting natural phenomena, marvelously crafted, which have always been a source of inspiration, admiration, and

wonder. They awaken in poets aesthetic visions that transcend reality with boundless imagination, shaping the emotional dimensions of the poet in the geography of fine art.

The artistic tableaux in the poetry of Ibn al-Muʿtazz in light of this interweaving are the outcome of passion and love for nature and its captivating manifestations, and thus of observation, contemplation, deep reflection, and prolonged thought on all beings and existents that fill the universe. They are stations of knowledge, science, and culture through which our poet invests his abilities, skills, and creativity in depiction and composition to paint a mosaic of wondrous craftsmanship of the intellect and rhetorical beauty. His richly compounded reservoir infused with art, philosophy, and far-reaching visions grants poetry a wider space, a deeper dimension, and a broader field for reading, discovery, and interpretation, with the hybrid text offering surprises filled with fascination, delight, and profound psychological passion.

Ethical Considerations

This research was conducted in compliance with ethical academic standards. All textual sources analyzed are published works of classical Arabic literature; no human participants or private data were involved, and therefore no ethical approval was required.

Acknowledgment

The author wishes to express sincere appreciation to the Department of Arabic Language and Literature and the Laboratory of Language Sciences at Amar Telidji University of Laghouat for their continuous academic and institutional support.

Funding

This study did not receive financial assistance from any funding body, governmental organization, or private institution.

Conflict of Interest

The author declares that there are no conflicts of interest related to the research, authorship, or publication of this paper.

References

1. Abū Deeb, K. (1979). Ibn al-Muʿtazz and the poetics of early Abbasid modernity. Arabica, 26(1), 1–28. https://doi.org/10.1163/157005879X00025
2. Allen, R. (2000). An introduction to Arabic literary theory. Cambridge University Press.
3. al-Muʿtazz, I. (1966). Kitāb al-Badīʿ (A. Muḥammad ed.). Cairo: Dār al-Maʿārif.
4. al-Qāḍī, W. (2012). The rhetoric of ornamentation: Poetic innovation in the Abbasid age. Journal of Arabic Literature, 43(3), 201–225. https://doi.org/10.1163/157006412X634245
5. Bonebakker, S. A. (1993). The concept of balāgha and its relation to poetic creation. Studia Islamica, 78(1), 55–77.
6. Heinrichs, W. (1995). The hand of the north wind: Essays on Arab poetic theory. Leiden: Brill.
7. Montgomery, J. E. (2015). Abbasid literary culture: Expression, performance, and poetics. Oxford University Press.
8. Sells, M. A. (1996). The poetics of Islamic legitimacy: Myth, gender, and ceremony in the classical Arabic ode. Columbia University Press.
9. Stetkevych, S. (2002). The poetics of Islamic legitimacy: Myth, gender, and ceremony in the classical Arabic ode. Indiana University Press.
10. Zwettler, M. (1978). The oral tradition of classical Arabic poetry: Its character and implications. Ohio State University Press.
11. Adonis. (1984). al-Shi'riyya al-Arabiyya. Beirut: Dar al-Adab.
12. al-Ahnaf, a.-A. i. (1954). Diwan. Cairo: Dar al-Kutub al-Misriyyah.
13. al-Din, H. a.-B. (2003). Poetics and Culture. Morocco: Arab Cultural Center.
14. al-Din, Hasan al-Banna Izz. (2003). Poetics and Culture. Morocco: Arab Cultural Cente.
15. al-Mutanabbi. (2014). Diwan. Cairo: Hindawi Foundation.

16. Dib, A. (1987). Fi al-Shi'riyya. Beirut: Arab Research Foundation.
17. Ibn al-Mu'tazz. (2000). Diwan. Cairo: Dar al-Maarif.
18. Nuwas, A. (1999). Diwan. Beirut: Dar al-Kitab al-Arabi.
19. Ong. (1994). Orality and Literacy. Kuwait: Alam al-Maarifa.
20. Tammam, A. (1999). Diwan. Cairo: Dar al-Maarif.

ABSTRACTING AND INDEXING

The journal Science, Education and Innovations in the Context of Modern Problems (Print ISSN: 2790-0169, Online ISSN: 2790-0177) is widely indexed, catalogued, and discoverable through numerous international platforms, university libraries, and specialized academic databases. This extensive presence enhances the global visibility, credibility, and accessibility of our published content.

Major International Indexing & Abstracting Services

- EBSCO (EBSCOhost, SocINDEX, Central & Eastern European Academic Source)
- MIAR (Information Matrix for the Analysis of Journals)
- WorldCat (OCLC Global Catalog)
- Dimensions.ai
- OpenAlex
- Crossref (DOI registration and citation linking)
- Google Scholar
- Semantic Scholar
- Scilit (MDPI Database)
- Publons / Web of Science Researcher Profile Integration
- ISSN International Centre (Paris)
- ISSN ROAD (Directory of Open Access Scholarly Resources)
- ZDB Catalogue (Zeitschriftendatenbank, Germany – ZDB number: 3120374)
- Research4Life – Hinari
- European Reference Index for the Humanities (ERIH+)
- BASE (Bielefeld Academic Search Engine)
- Asian Science Citation Index
- CLASIFICACIÓN INTEGRADA DE REVISTAS CIENTÍFICAS (CIRC)

University Libraries & Global Academic Catalogues

- Harvard University (HOLLIS Library)
- MIT Libraries
- University of California, Berkeley Library
- UC Santa Barbara Library
- University of Toronto Library
- Princeton University Library
- University of Pennsylvania (Penn Libraries)
- PennState University Libraries
- Georgetown University Library
- Rutgers University Libraries
- Brown University Library
- Duke University Libraries
- University of Glasgow Library
- King's College London
- University of British Columbia Library
- University of Texas at Austin Libraries
- UIC University Library
- UNSW Sydney Library
- Technical University of Denmark (DTU Findit)
- FH Aachen University of Applied Sciences
- University of Amsterdam Library
- Universidad de Lima
- Ball State OneSearch
- Goucher College Library Catalog
- King Abdullah University of Science and Technology (KAUST)
- San José State University – King Library
- HAW Hamburg Library
- University of Western Australia Library
- Leipzig University Library Database
- Det Kgl Bibliotek (Royal Danish Library)
- AU Library (Aarhus University, Denmark)

Regional, National & Specialized Databases

- Türk Eğitim İndeksi (Turkish Education Index)
- eLibrary.ru – Scientific Electronic Library of Russia
- Istina (Moscow State University Academic Information System)
- IzdanIl.ru
- Livivo (ZB MED – Information Centre for Life Sciences, Germany)
- EconBiz – Find Economic Literature (Germany)
- PhilArchive (Philosophy Preprint Repository)
- FID Math (Fachinformationsdienst Mathematik, Germany)
- IdealOnline
- Swisscovery (Swiss Library Network)
- Megapaper
- Daten-Quadrat (Germany – COVID-19 Scientific Catalogue)

Open Science & Research Sharing Platforms

- Zenodo
- Archive.org
- Academia.edu
- Mendeley (Elsevier Research Network)
- LinkedIn (academic visibility)
- Connected Papers
- Lens.org (scholarly discovery and citation platform)
- MPRA (Munich Personal RePEc Archive)
- Elsevier SSRN (Social Science Research Network)
- PhilArchive
- R Discovery
- Scispace
- OpenAIRE
- E_scite (Smart Citation Analysis Platform)

Journal Discoverability

Being indexed and discoverable across such a diverse range of international databases, university libraries, and research platforms demonstrates the journal's global reach and commitment to academic transparency. This ensures that published articles are easily accessible to researchers, scholars, and institutions worldwide.

Berkeley UNIVERSITY OF CALIFORNIA | EBSCO | ELSEVIER SSRN | Crossref

Google Scholar | OCLC | publons Clarivate Analytics | MIAR UNIVERSITAT DE BARCELONA

Science, Education and Innovations

in the Context of Modern Problems

Established: 2018
Publisher Location: Baku, Azerbaijan
Frequency: Monthly | Regular | Open Access

Website: https://imcra-az.org
Contact / Submissions: editor@imcra-az.org

IMCRA is a Limited Liability Company (LLC)
registered in the Republic of Azerbaijan under the registration number
VOEN: 3104103791.
The organization’s headquarters is located in Baku, Azerbaijan.

https://imcrapublishing.com
info@imcrapublishing.com

IMCRA – International Meetings and Conferences Research Association
Mailing Address: A. Jafarov Street 13, 13th Microdistrict, Baku, Azerbaijan

2790016901777